DUST-HOG®
DUST COLLECTION SYSTEMS

Supra-Pulse FJH Series
Cartridge Dust Collector
Owner's Manual

KNOW YOUR EQUIPMENT

READ THIS MANUAL FIRST.

Your DUST-HOG system should provide many years of trouble-free service. This manual will help you understand its operation, tell you how to obtain top performance, and show you how to maintain your DUST-HOG unit. Finally, for quick future reference, fill in the system and filter information in the spaces below. Should you need assistance, call the DUST-HOG factory service number shown below. Make certain you have the information below before calling.

UAS ORDER #: _____

UNIT MODEL #: _____

UNIT SERIAL #: _____

CARTRIDGE FILTER PART #: _____

SYSTEM ACCESSORIES:

_____

_____

_____

INSTALLATION DATE: _____

DUST-HOG CUSTOMER SERVICE

1-800-252-HOGS

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1. IMPORTANT NOTICE

This manual contains important safety information and precautionary measures. It is impossible to list all potential hazards associated with every dust collection system in each application. Proper use of the equipment must be discussed with United Air Specialists, Inc. (UAS) or your local DUST-HOG® representative. Operating personnel must be aware of, and adhere to, the most stringent safety procedures.

⚠ WARNING

A warning symbol means people may be injured if the procedures are not followed.

⚠ CAUTION

A caution symbol is used when equipment could be damaged if the procedures are not followed.

1.1 GENERAL CAUTIONS ON USING DUST CONTROL EQUIPMENT

1. Avoid mixing combustible materials such as aluminum, paper, wood or other organic dusts, with dusts generated from grinding or welding metals. A fire hazard could develop from sparks entering the dust collector. When collecting flammable or explosive materials, the dust collector should be located outdoors and incorporate the appropriate safety measures and/or accessories.
2. When collecting emissions from spark-producing processes, care must be taken to reduce any potential fire hazards. System design should include methods to prevent sparks from entering the dust collector. Dust collectors do not contain fire extinguishing equipment unless specifically ordered. Experts in the field of fire extinguishing equipment should be consulted for recommendations concerning proper fire detection and suppression systems.
3. Some dust collection systems require explosion venting. Consult your insurance underwriter, NFPA (National Fire Protection Association) Manual and your local fire authorities to determine the requirements for explosion venting.
4. Be careful and conscientious — consult national and local fire codes, waste disposal, safety and other appropriate authorities and comply with their recommendations for the proper installation and operation of dust collection equipment.

2. INTRODUCTION

Thank you for selecting DUST-HOG dust collection equipment to assist you in your commitment to a clean and safe environment. We trust in purchasing our product you have recognized our commitment to continually offer dust collection equipment engineered to each dust collection need and manufactured to the highest quality standards.

The Supra-Pulse Cartridge Dust Collector is designed to collect process-generated dusts. The Supra-Pulse provides continuous-duty cleaning and operation in its application to improve the work environment.

2.1 UNIT NOMENCLATURE

EXAMPLE: FJH 24-3-H

FJH — DUST-HOG Supra-Pulse cartridge dust collector

24 — number of cartridge filters

3 — number of filters tiers

H — unit base arrangement (hopper base includes one hopper outlet per module)

2.2 DESCRIPTION AND OPERATION

The Supra-Pulse is a high efficiency, cartridge dust collector designed to eliminate airborne dust as it is generated. Contaminants are captured at the source(s), then conveyed through ductwork to the cartridge filter section where the dust is collected. Clean air is then discharged from the unit.

There are two primary modes of operation. These are the air filtering operation and the filter cleaning cycle as shown in Figure 1.

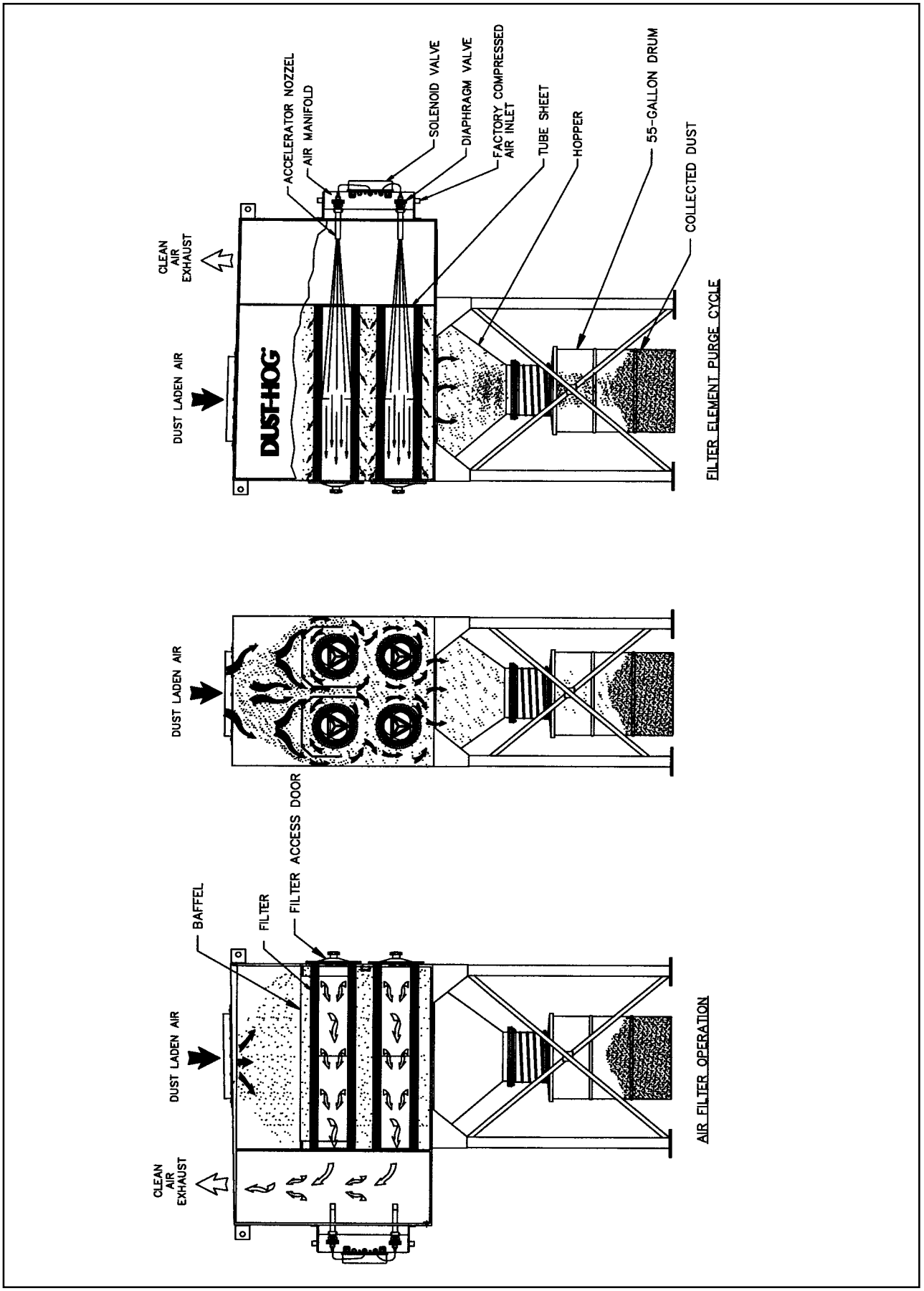


Figure 1. Air Filter Operation & Cleaning

2.3 AIR FILTERING OPERATION

The contaminated airstream is drawn into the collector where its velocity is reduced by an inlet baffle plate(s) to provide even distribution of the airstream across the entire surface area of the cartridge filters. This design enhances filtration efficiency by establishing a uniform “dust cake” on the filters. The airstream is then directed around the cartridge filters and downward toward the hopper where the heavier particles discharge to the storage container.

The contaminated air then passes through the cartridge filters. The filter media strips the dust from the airstream allowing only clean air to pass through the filter. The air then passes into the clean air plenum, and is discharged from the unit.

2.4 FILTER CLEANING CYCLE

During normal operation, the surface of the cartridge filters becomes loaded with contaminants. The reverse pulse cleaning mechanism provides brief bursts of compressed air, directed through cleaning nozzles, into the interior of the cartridge filters. This pulsing action dislodges the collected particles from the media where it falls into the hopper and is discharged to the dust storage container.

During the cleaning cycle, each cartridge filter is cleaned individually. The solid-state sequential timer actuates a solenoid valve which allows an air diaphragm valve to open for approximately 100 milliseconds. High pressure air from the air manifold reservoir is directed through a cleaning nozzle to the cartridge center. The quick blast of compressed air induces additional air from the clean air plenum which combine to produce a shock wave, dislodging the dust from the filter being cleaned.

The dislodged dust removed from the filter is swept downward into the hopper. The remaining filters are cleaned sequentially. The sequencing is factory set at 10-second intervals and is adjustable to adapt to your particular cleaning needs.

3. SPECIFICATION TABLE

Supra-Pulse Model	Filter Quantity	Filter Area FT^2	Valve Quantity	Module Quantity	Equipment Weight,
FJH 4-1-H	4	904	2	1	1,560 lbs
FJH 8-2-H	8	1,808	4	1	1,830 lbs
FJH 16-2-H	16	3,616	8	2	3,127 lbs
FJH 24-2-H	24	5,424	12	3	4,424 lbs
FJH 32-2-H	32	7,232	16	4	5,809 lbs
FJH 12-3-H	12	2,712	6	1	2,100 lbs
FJH 24-3-H	24	5,424	12	2	3,559 lbs
FJH 36-3-H	36	8,136	18	3	5,018 lbs
FJH 48-3-H	48	10,848	24	4	6,565 lbs
FJH 60-3-H	60	13,560	30	5	8,024 lbs
FJH 72-3-H	72	16,272	36	6	9,483 lbs
FJH 16-4-H	16	3,616	8	1	2,370 lbs
FJH 32-4-H	32	7,232	16	2	3,993 lbs
FJH 48-4-H	48	10,848	24	3	5,616 lbs
FJH 64-4-H	64	14,464	32	4	7,327 lbs
FJH 80-4-H	80	18,080	40	5	8,950 lbs
FJH 96-4-H	96	21,696	48	6	10,573 lbs
FJH 112-4-H	112	25,312	56	7	12,284 lbs
FJH 128-4-H	128	28,928	64	8	13,907 lbs

4. INSTALLATION

4.1 OFF LOADING AND INSPECTION

Supra-Blast dust collector modules are shipped assembled on a skid(s). Other skids will contain the hopper/leg assembly and other components. Other accessories (afterfilter assemblies, blower packages, dust storage drums, silencers, etc.) may be on additional, separate skids.

⚠ CAUTION

Lift the dust collector components by the packing skids or use the external lifting lugs provided on the filter module. Do not lift the filter module of the dust collector by placing lift truck forks through the cartridge filter access doors. The filter support rails or the conical air distribution tips installed on the tubesheet could be damaged.

Upon receipt of your unit, check for any shipping damage. A damaged carton indicates that the equipment may have received rough handling during shipping that may have caused internal damage. Notify your delivery carrier and enter a claim if any damage is found.

4.2 INSTALLATION PLANNING

The proper location of your dust collection equipment is very important. Refer to Figure 2 for typical installation details.

Certain items should be considered when locating the unit, such as emptying of the dust storage container(s), filter removal requirements, compressed air and electrical connections, and fan discharge direction. The shortest duct length with a minimum number of elbows will maximize the performance of the unit. Ease of maintenance should also be considered when selecting the location and orientation of the system (see Figure 3).

In the case of spark producing processes, system design should incorporate measures to prevent live sparks from entering the dust collector. Consult local authorities for the location of this unit and any additional precautions to consider when collecting combustible, explosive or hazardous dusts. (See General Cautions on page 1.)

The Supra-Pulse Dust Collector is usually mounted on a reinforced concrete foundation. Other mounting options are also possible. Structural calculations for the foundation or other mounting arrangements must include the weight of the collected material and the weight of all auxiliary equipment. These weights must be considered together with wind, seismic and other live load ratings when designing the support structure. See the Specification Table on page 3 for dust collector unit weights.

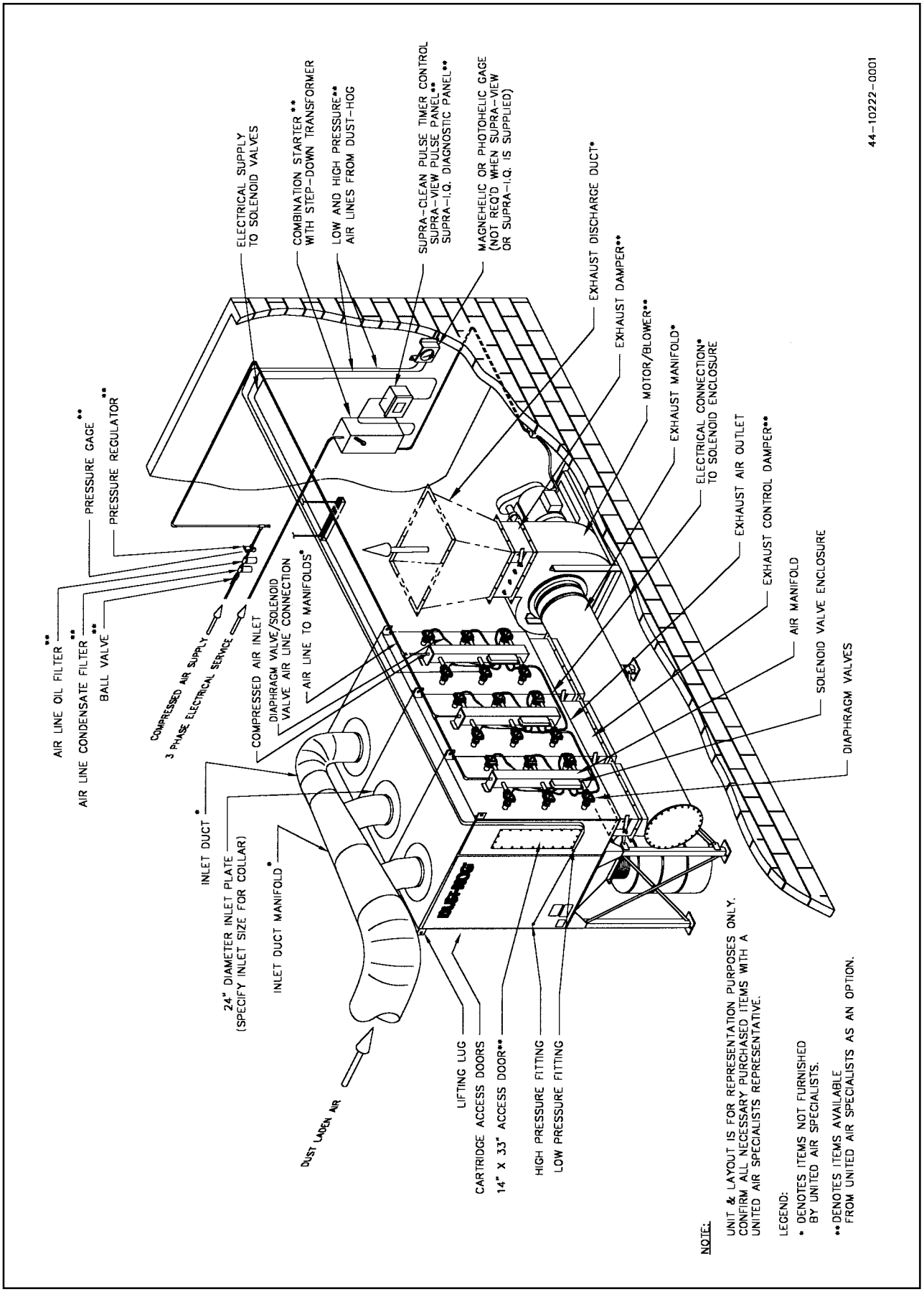

AIR LINE OIL FILTER**
AIR LINE CONDENSATE FILTER**
BALL VALVE**
PRESSURE GAGE**
PRESSURE REGULATOR**
COMPRESSED AIR SUPPLY
3 PHASE ELECTRICAL SERVICE
COMPRESSED AIR INLET
DIAPHRAGM VALVE/SOLENOID VALVE AIR LINE CONNECTION
AIR LINE TO MANIFOLDS*
ELECTRICAL SUPPLY TO SOLENOID VALVES
COMBINATION STARTER** WITH STEP-DOWN TRANSFORMER
LOW AND HIGH PRESSURE** AIR LINES FROM DUST-HOG
SUPRA-CLEAN PULSE TIMER CONTROL SUPRA-VIEW PULSE PANEL** SUPRA-I.Q. DIAGNOSTIC PANEL**
MAGNEHELIC OR PHOTOHELIC GAGE (NOT REQ'D WHEN SUPRA-VIEW OR SUPRA-I.Q. IS SUPPLIED)
EXHAUST DISCHARGE DUCT*
EXHAUST DAMPER**
MOTOR/BLOWER**
EXHAUST MANIFOLD*
ELECTRICAL CONNECTION* TO SOLENOID ENCLOSURE
EXHAUST AIR OUTLET
EXHAUST CONTROL DAMPER**
AIR MANIFOLD
SOLENOID VALVE ENCLOSURE
DIAPHRAGM VALVES
INLET DUCT*
24" DIAMETER INLET PLATE (SPECIFY INLET SIZE FOR COLLAR)
INLET DUCT MANIFOLD*
DUST LADEN AIR
LIFTING LUG
CARTRIDGE ACCESS DOORS
14" X 33" ACCESS DOOR**
HIGH PRESSURE FITTING
LOW PRESSURE FITTING
NOTE:
UNIT & LAYOUT IS FOR REPRESENTATION PURPOSES ONLY. CONFIRM ALL NECESSARY PURCHASED ITEMS WITH A UNITED AIR SPECIALISTS REPRESENTATIVE.
LEGEND:
* DENOTES ITEMS NOT FURNISHED BY UNITED AIR SPECIALISTS.
** DENOTES ITEMS AVAILABLE FROM UNITED AIR SPECIALISTS AS AN OPTION.
44-10222-0001

Figure 2. Typical Installation Diagram

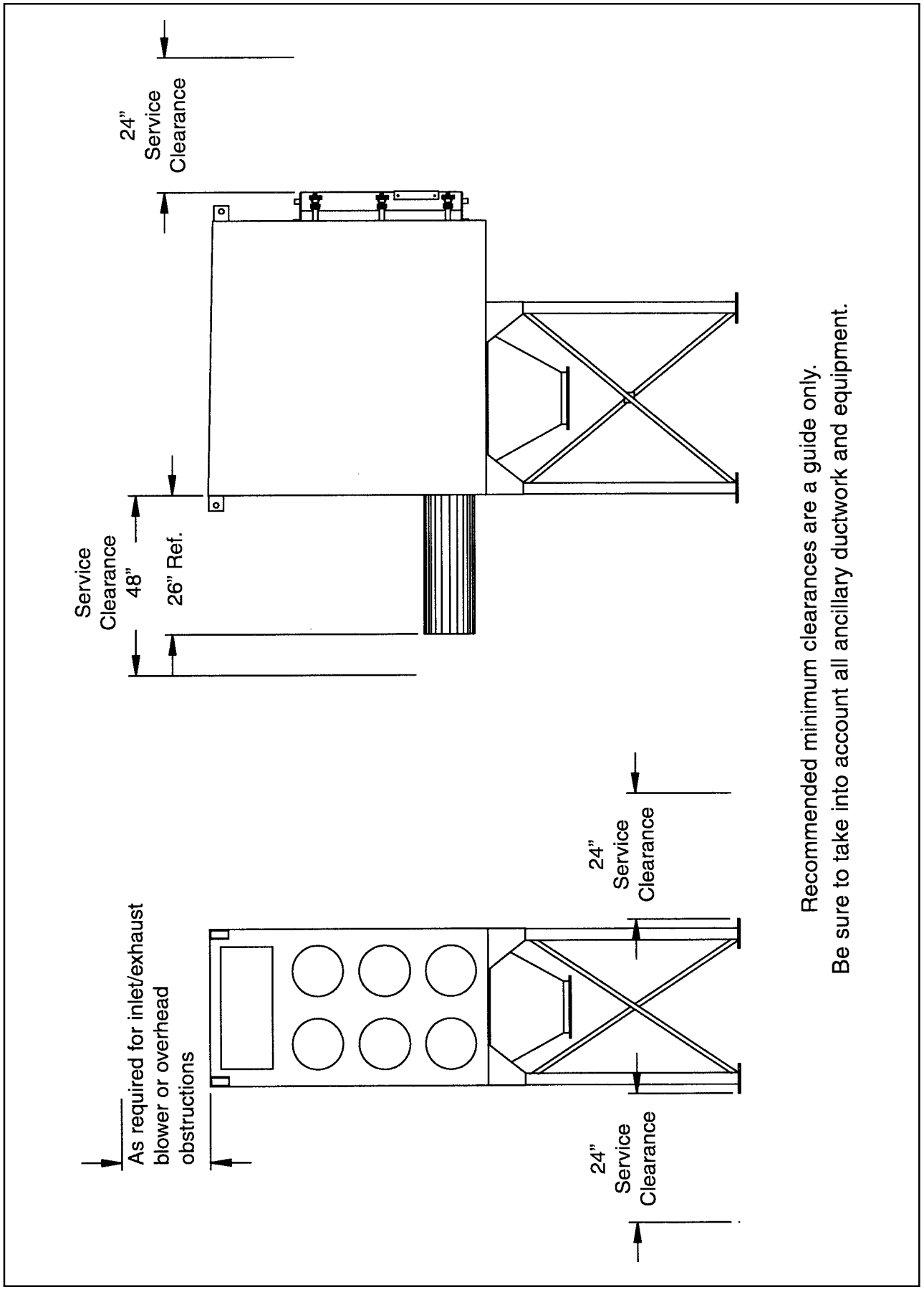

24" Service Clearance
Service Clearance 48"
26" Ref.
24" Service Clearance
As required for inlet/exhaust blower or overhead obstructions
24" Service Clearance
Recommended minimum clearances are a guide only.
Be sure to take into account all ancillary ductwork and equipment.

Figure 3. Recommended Minimum Clearance

4.3 ASSEMBLING OF STANDARD EQUIPMENT

⚠ CAUTION

Use adequate safety measures when lifting and assembling any heavy components. Consult your plant safety personnel for recommendations.

Remove all crating, strapping and hold-down bolts. Locate all hardware bags, silicone sealant and other assembly materials provided with your unit.

FULLY WELDED MODULE SECTIONS

Position legs as shown in “Plan Detail” on unit sales drawing. Bolt on sway braces using hardware as shown. Leave all hardware hand-tight only; shim legs as required (see Figure 4).

Secure leg assemblies to concrete mounting pad with appropriate anchoring hardware. Anchors should be provided by customer and contractor according to local codes.

Fit hopper over leg assemblies, positioning the corner holes of hopper over alignment pins in each leg gusset corner. Apply two ribbons of sealant to hopper flange to create “figure 8” pattern around mounting holes (see Figure 5).

⚠ CAUTION

In preparing to assemble the filter cabinet to the hopper, connect a lifting sling to the four cabinet lifting lugs with clevis pins. Distribute the load evenly. Location must be clear of all obstructions such as utility lines or roof overhangs.

Place cabinet onto hopper/leg assemblies, positioning cabinet corner holes over alignment pins in leg gussets.

With cabinet still supported, use hardware (refer to Figure 5) to bolt hopper and cabinet together. Securely tighten all hardware at cabinet/hopper and leg assembly sway braces. Remove lifting sling.

MULTIPLE, BOLT-TOGETHER MODULE SECTIONS

For units that have multiple, bolt-together module sections, remove the row of filters (see Section 6.1) from the modules nearest the bolt flange and locate out of the way in a safe area. Identify the different module sections. There is a left (bolt flange on the right side), a right (bolt flange on the left side) and, possibly, center (bolt flange on both sides) module sections.

Position legs as shown in the “plan detail” as described earlier. Bolt on sway bracing hand tight (refer to Figure 4) and level as required. Fit hopper over the leg assemblies, positioning the corner holes of the hoppers over alignment pins in each leg gusset corner. Starting with the hopper that is furthest away, apply two ribbons of sealant to its flange creating a “figure 8” pattern around the mounting holes (see Figure 5).

⚠ CAUTION

In preparing to assemble the filter cabinet to the hopper, connect a lifting sling to the four cabinet lifting lugs with clevis pins. Distribute the load evenly. Location must be clear of all obstruction such as utility lines or roof overhangs.

Place the appropriate module section onto the hopper to which the sealant has been applied using the same corner alignment pins for proper positioning. Drift pins will also be useful for locating module sections onto the hopper. With the module still supported, use hardware (refer to Figure 5) to bolt the hopper and cabinet module together. Fully tighten the hardware on legs, bracing, anchors and hopper for this module section only. Disconnect the crane.

Apply sealant to the next hopper to receive a cabinet module. Apply sealant to the bolt flange of the first module using the “figure 8” pattern (see Figure 5). Place this module on its hopper using the same technique as described above, leaving the hopper hardware hand-tight. As the bolt flanges are aligned, take care not to wipe off the sealant from the flange. Drift pins will be useful in this alignment process. Use the hardware provided (refer to Figure 6) and bolt the module sections together. Use all bolt holes. Tighten the bolt flange hardware securely. With the module section still supported by the crane, tighten the other hardware connections securely at the hopper and legs. Disconnect the crane.

Repeat this process until all the module sections are in place and securely fastened. Recheck all hardware connections to make sure that they are securely tightened. Remove all connections from the crane and clear all tools from the work area.

NOTE: Make certain all bolts (including the anchor bolts) are properly tightened before proceeding with the remainder of the installation.

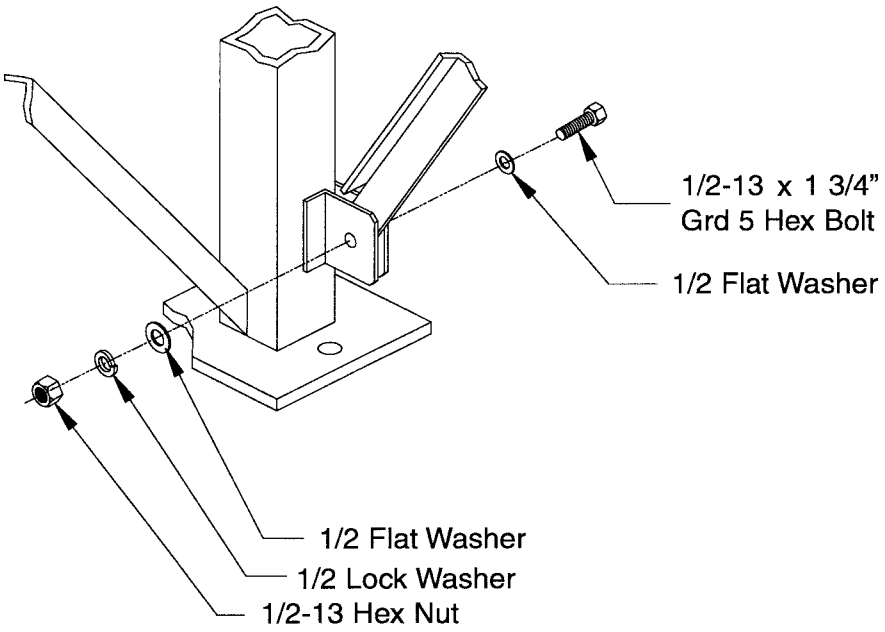


Figure 4. Typical Sway Brace Installation

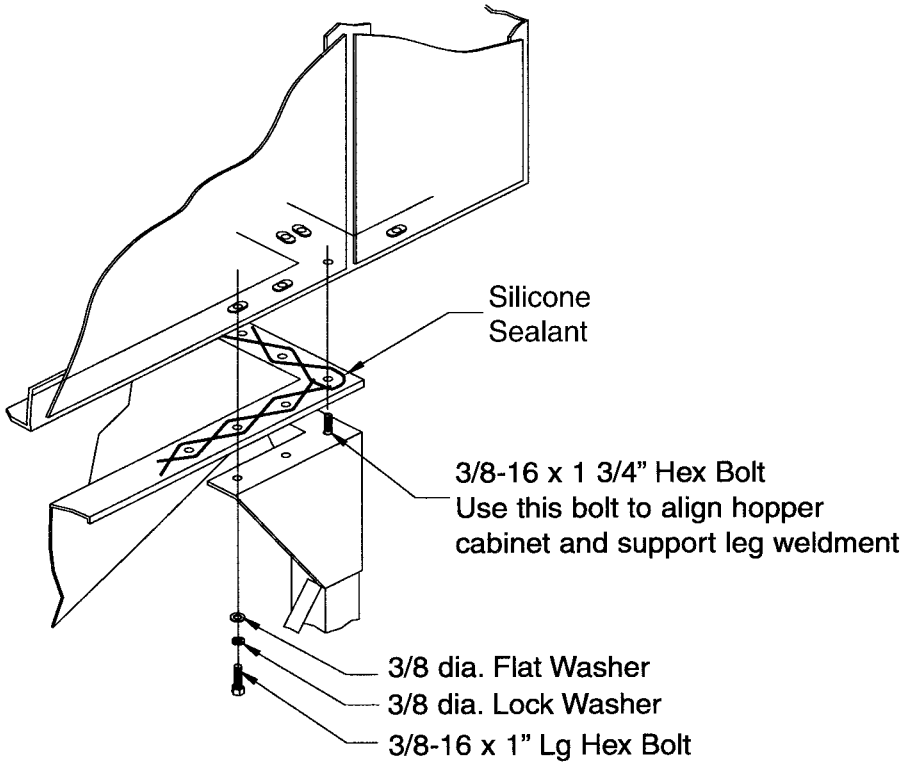

Silicone
Sealant
3/8-16 x 1 3/4" Hex Bolt
Use this bolt to align hopper
cabinet and support leg weldment
3/8 dia. Flat Washer
3/8 dia. Lock Washer
3/8-16 x 1" Lg Hex Bolt

Figure 5. Corner Alignment Detail

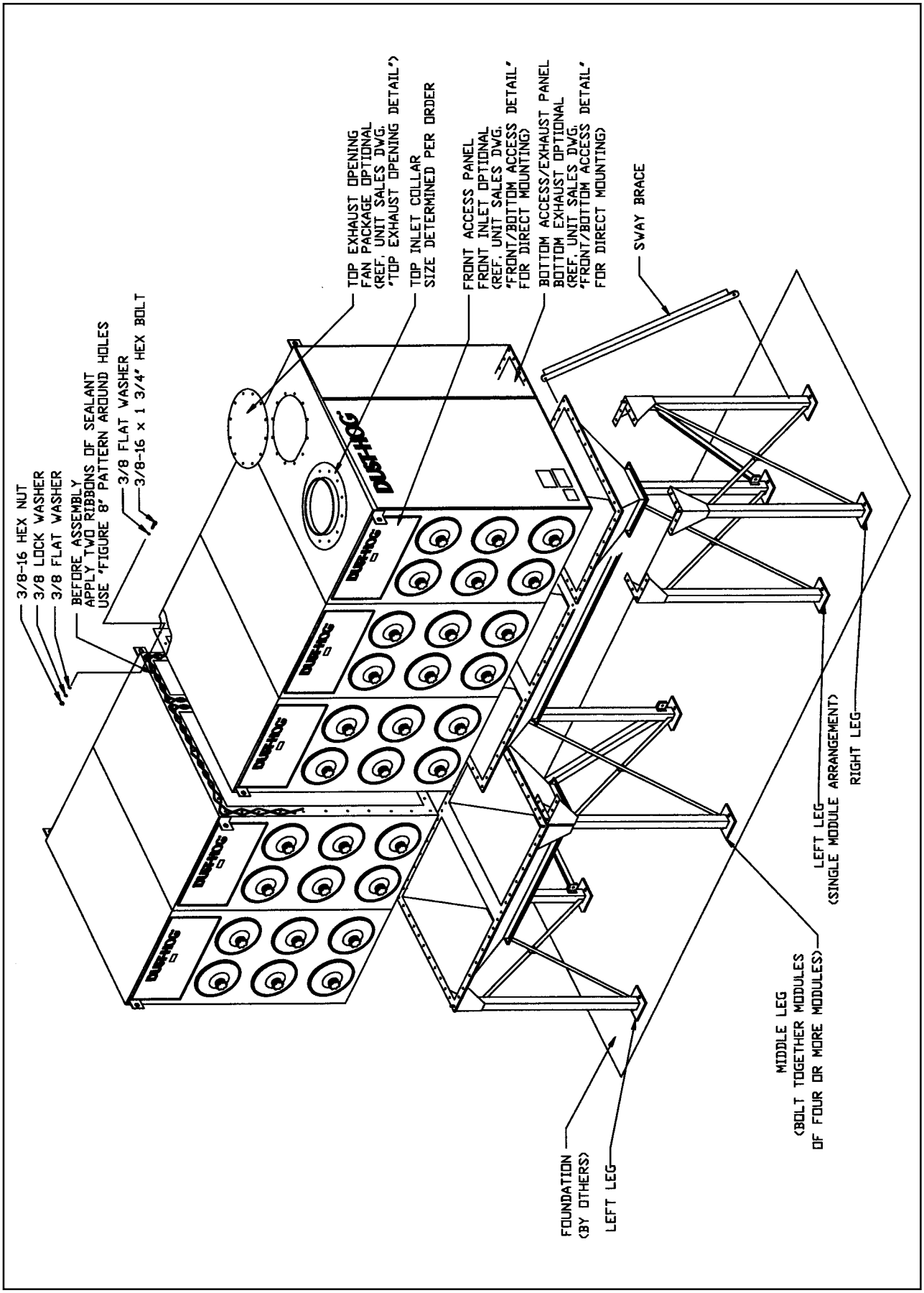


Figure 6. Multiple, Bolt-Together Module Sections

4.4 ASSEMBLY OF OPTIONAL EQUIPMENT

FAN PACKAGE INSTALLATION

If a top-mount fan was ordered, remove the clean air plenum cover plate and save the mounting hardware. Ensure Teflon® ribbon gasket remains on the unit. Lift fan package using safe, suitable means and position fan base holes over cabinet holes with fan discharge pointing in the desired direction. Secure with bolt/ washer assemblies previously removed.

If the fan package is a ground-mount fan, follow manufacturer's recommendation for installation. The installation manual is attached to the fan package. Outlet ductwork from the Supra-Pulse unit to the fan can be connected to either the top or bottom access panel. Panels which are not used as clean air discharge connection points will serve as inspection ports.

The bottom access panel and its gasket are shipped loose with installation hardware. If the bottom access is not to be used for discharge ductwork, attach the panel to the bottom opening using the hardware provided.

DUCT SILENCER INSTALLATION

A duct-type silencer is designed to bolt directly to the fan outlet damper flange. Make certain there is adequate room for the silencer in the discharge direction and provide at least 24" of unobstructed space at the discharge end of the silencer. The air discharge should be directed into an open area free of obstructions and with consideration for personnel safety.

⚠ CAUTION

Do NOT use the fan damper flange to support the silencer.

The silencer will require separate support. Apply silicone around the bolt holes of the connecting flanges, lift the silencer into position and secure with the hardware provided. Install permanent supports (not supplied by UAS) and tighten all hardware before removing the lifting device.

ROTARY AIR LOCK INSTALLATION

If a rotary air lock was ordered with the unit, the hopper discharge will have an adapter already bolted to it. Ensure that the bolts connecting the adapter to the hopper discharge are securely tightened.

Remove all packing from the rotary air lock and determine its appropriate position. Keep in mind required clearances, electrical connections and maintenance requirements. Apply sealant to the flange of the rotary air lock and fasten to the adapter using 3/8" bolts, nuts, washer and lock washers.

All electrical connections should be made by a qualified electrician according to all applicable codes. Refer to the nameplate and/or documentation attached to the rotary air lock for voltage, amperage, cycle and proper wiring.

⚠ CAUTION

Disconnect all power to the rotary air lock before servicing. There are moving parts on the rotary air lock. Do not allow any object to be placed in or near the rotary air lock during operation.

ABRASIVE RESISTANT INLET INSTALLATION

The abrasive resistant inlet is designed to use the front access(es) of the Supra-Pulse modules as the inlet area to the unit. There are three styles available: the single, dual or triple module abrasive resistant inlet. Each is designed to fit over the appropriate number of front accesses to serve as a single inlet point for one to three modules (see Figure 7).

Remove the front access plate(s) located above the filter access doors. Save the hardware; this will be used to attach the abrasive resistant inlet. Remove any remaining gasket material from around the perimeter of the opening.

Apply a 1/4" bead of sealant around the perimeter of the access opening. Clean out if required for maintenance. If the bottom plate is removed, carefully remove the ribbon of Teflon sealant and reuse after cleaning the gasket surfaces. The bottom plate on the abrasive inlet will serve as an inspection plate. Clean out if required for maintenance. If the bottom plate is removed, carefully remove the ribbon of Teflon sealant and reuse after cleaning the gasket surfaces.

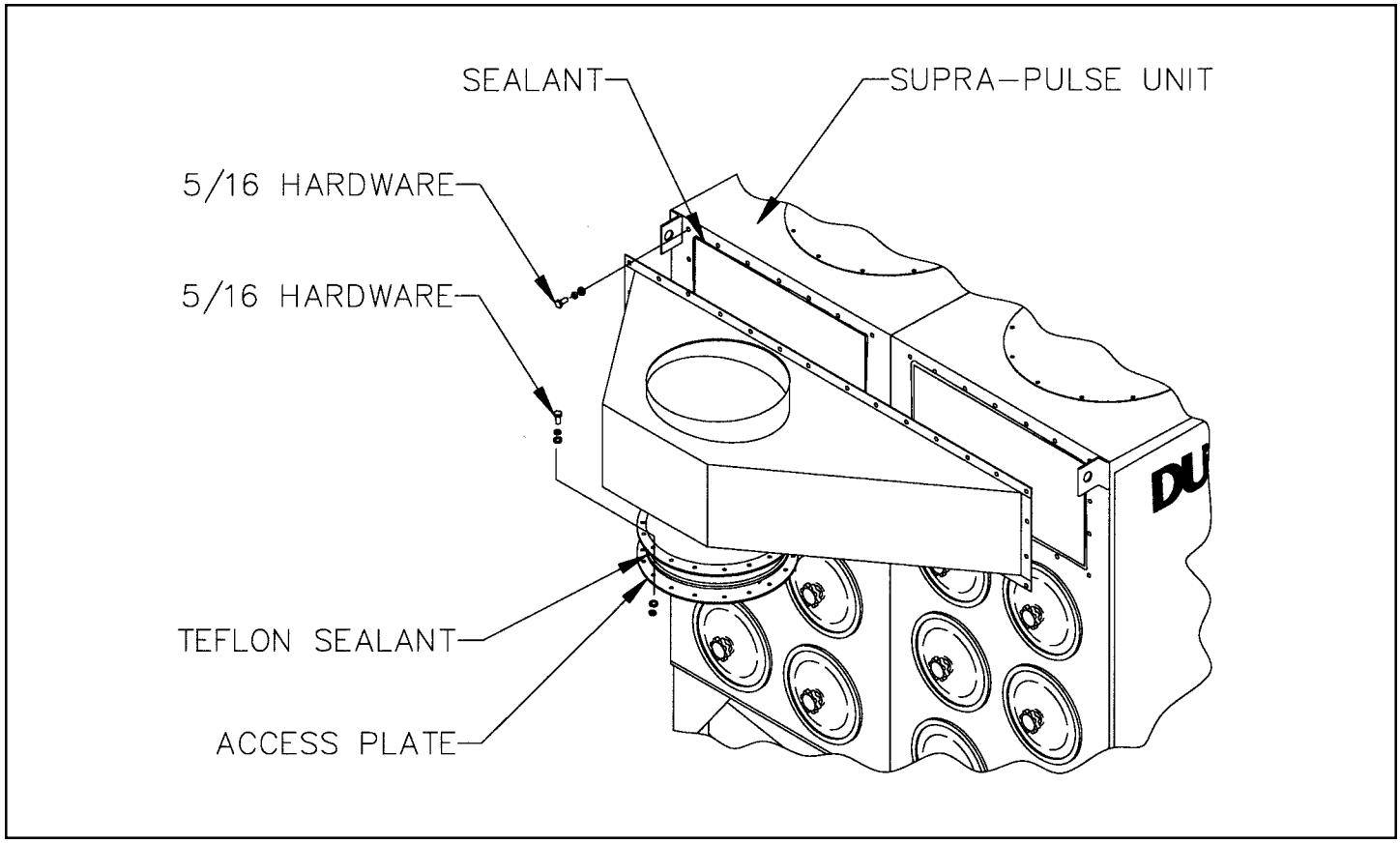


Figure 7. Abrasive Resistant Inlet Installation

DRUM LID INSTALLATION

Remove the drum lid package from its shipping carton. Place the drum lid on a 55-gallon drum (optional). Slide the 14" hose over the drum lid and secure with a hose clamp. Position the drum assembly under the unit, slide the hose up onto the discharge adapter collar on the hopper and secure with a hose clamp.

If a drum lid latch kit was ordered, attach the separate clamp band around the 55-gallon drum, leaving the cinch bolt loose. Position the three latch pawls onto the drum lid catches, rotating the drum lid as required. Tighten the cinch bolt and adjust the latch tension and/ or band placement as required (see Figure 8).

If a slide gate was ordered, it was factory installed on the hopper. Open the slide gate. Repeat for multiple drum lid connections.

NOTE: The hopper is not designed for dust storage. The slide gate should remain open during normal operation.

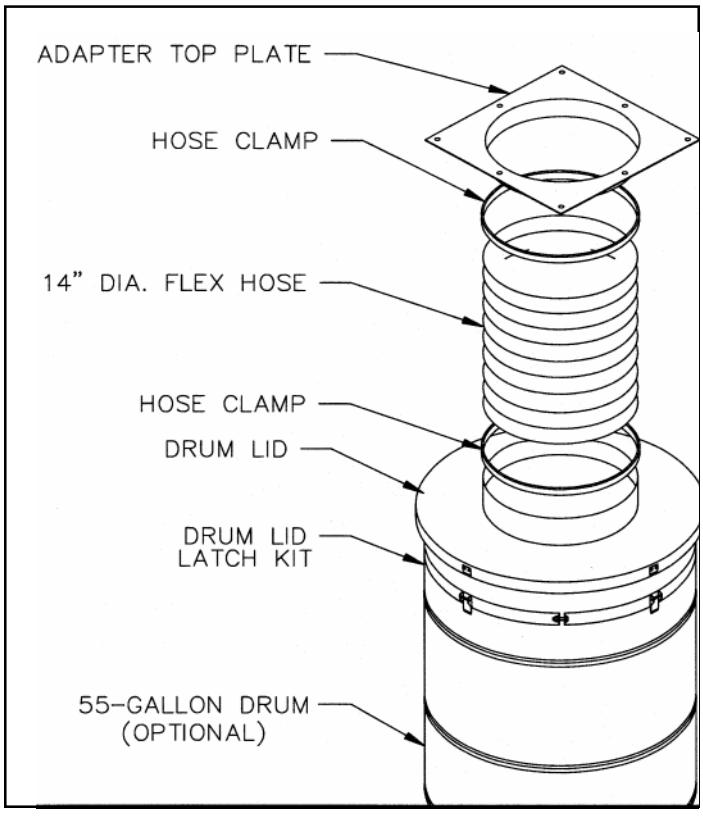


Figure 8. Drum Lid Installations

MAGNEHELIC® GAGE INSTALLATION

If your system was ordered with a Magnehelic Gage, remove it and the hardware from the box. Instructions for mounting and connecting the Magnehelic Gage are provided from the manufacturer. Follow these instructions using the hardware provided. It should be installed within sight of the Supra-Pulse as shown in Figure 2.

NOTE: The hardware provided is designed for surface mounting of the Magnehelic Gage. Be certain to install the 1/8" NPT pipe plugs in the pressure ports on the back of the gauge.

Install the tube fittings in the pressure ports on the side of the gauge. Mount it to the bracket and the bracket to a support structure.

PHOTOHELIC® GAGE INSTALLATION

If your system was ordered with a Photohelic Gage, remove it and the hardware from the box. Instructions for mounting and connecting the Photohelic Gage are provided from the manufacturer. Follow these instructions using the hardware and UAS mounting bracket provided. The Photohelic Gage and mounting bracket should be installed within sight of the Supra-Pulse as shown in Figure 2. Hardware to mount the bracket to the support structure is not supplied by UAS.

NOTE: Be certain to install the two jumper wires (not supplied by UAS) as shown in the instruction manual provided with the gauge. Also see Figure 11.

SUPRA-CLEAN TIMERBOARD INSTALLATION

Your system comes standard with a Supra-Clean timer control for sequence pulse cleaning of your cartridge filters. The timer should be installed within sight of the Supra-Pulse as shown in Figure 2. Hardware to mount the panel to the support structure is not supplied by UAS.

SUPRA-VIEW PANEL INSTALLATION

If your system was ordered with a Supra-View control panel, remove panel and hardware from the box. The panel should be installed within sight of the Supra-Pulse as shown in Figure 2. Hardware to mount the panel to the support structure is not supplied by UAS. Refer to the *Supra-View Owner's Manual* for proper installation details.

SUPRA-I.Q. DIAGNOSTICS PANEL INSTALLATION

If your system was ordered with a Supra-I.Q. diagnostics panel, please refer to the *Supra-I.Q. Owner's Manual* for proper installation details.

FINAL CONNECTIONS FOR ALL GAUGE OPTIONS

For any control system, connect the black, plastic pressure tubing (25 feet provided by UAS) to the gauge or panel fittings and the Supra-Pulse. Connect the dirty air plenum on the Supra-Pulse to the high pressure port on the gauge or panel and the clean air plenum on the Supra-Pulse to the low pressure port on the gauge or panel as shown in Figure 10. Zero, calibrate and maintain the gauge as recommended by the manufacturer on the instructions provided with the gauge.

4.5 COMPRESSED AIR CONNECTION

⚠ CAUTION

Do NOT allow water and/or oil from the compressed air system into the compressed air manifold on the Supra-Pulse. To ensure a water-free air supply, especially when the unit is installed outdoors, a water filter with automatic drain or a condensate trap with automatic drain must be installed just before the piping enters the Supra-Pulse (see Figure 9).

Clean, dry, 90-110 PSIG compressed air is required for the pulse cleaning system to properly function. Compressed air consumption is noted on the unit sales drawing. A shut-off valve, pressure regulator and pressure gauge should be installed close to the Supra-Pulse unit. UAS recommends dedicated oil and water removal filters be used to ensure clean, dry air is delivered to the pulse system. Contact your local DUST-HOG representative for information on the UAS pneumatic valve kit. See Figure 9 for recommended compressed air piping.

NOTE: A 1" diameter or larger compressed air supply pipe is required.

Provide 1" minimum compressed air line piping to the unit. The pipe diameter should be based on the main line pressure, length of pipe run and number of pipe bends from the main line to the unit. The pipe connection for the Supra-Pulse unit is located on the bottom of the air reservoir manifold(s) on the back of the module(s) as shown in Figure 2. The connection size is a female 1" NPT fitting.

NOTE: Purge the compressed air line to remove any debris prior to making the final connection to the Supra-Pulse compressed air mainifold(s).

Remove the plastic plug from the Supra-Pulse air manifold(s) prior to making the final compressed air pipe connection. Apply pipe sealant to ensure a leak-free connection.

4.6 ELECTRICAL INSTALLATION

⚠ CAUTION

All electrical work should be performed by a qualified electrician in accordance with local electrical codes. Disconnect electrical power before installing or servicing any electrical component.

GENERAL

Several types of standard electrical components can be installed to control and monitor your dust collector ensuring proper cleaning of the cartridge filters. A fan motor starter circuit is required to start and stop the system. The motor starter circuit should consist of a properly-sized, fused disconnect or circuit breaker, contractor and overload relay for short circuit and overload protection of the blower package. A 115/1/60 low voltage (2 amp) control circuit is required for the pulse cleaning controls. Any one of the following control configurations can be used (refer to Figures 11 - 13 for wiring schematics):

- Motor starter with Supra-Clean timerboard for continuous pulse (Magnehelic Gage). See Figure 11 for recommended wiring.
- Motor starter with Supra-Clean timerboard for setpoint pulse (Photohelic Gage). See Figure 11 for recommended wiring.
- Motor starter with Supra-View Panel for self contained differential pressure display, pulse control and alarm. See Figure 12 for recommended wiring.
- Motor starter with Supra-I.Q. Diagnostics Panel for complete monitoring and automated pulse control. See Figure 13 for recommended wiring.

Refer to UAS sales order to verify the control configuration purchased with your unit.

MOUNTING OF THE CONTROLS

Mount the motor starter for the fan motor control in a convenient location. The motor starter is provided by the customer, unless specifically ordered from UAS. Mounting hardware for a UAS starter panel is provided by the customer or contractor.

Mount the solid-state cleaning controls (Supra-Clean, Supra-View or Supra-I.Q.) in a convenient location. It is recommended that the controls be mounted on a wall or pedestal in a convenient area subject to minimal vibration and electrical noise.

⚠ CAUTION

Avoid mounting the Supra-Clean, Supra-View and Supra I.Q. Panel on the collector due to vibration generated from the blower assembly and the pulsing system.

PULSE CLEANING CONTROLS

For a more in-depth explanation of the cleaning control features and options, refer to Section 5 or the *Installation and Operation Manual* supplied with the Supra-Clean timerboard, Supra-View Panel or Supra-I.Q. Diagnostics Panel.

SOLENOID VALVE ENCLOSURE WIRING

The solenoid valves at the dust collector must be wired correctly to the pulse controls. Refer to Figure 14 when making connections from the pulse controls (Supra-Clean timerboard, Supra-I.Q. Diagnostics Panel) to the solenoid valve enclosure(s).

Example: Figure 14 shows the FJH-8 having eight valve locations per module. This means when the system pulses, “1” is the first pulse in the sequence, “2” is the second, “3” is the third, etc.

When multiple dust collector modules are installed, daisy chain the wiring so that each solenoid valve with the same module location will pulse at the same time. This means all #1 solenoid valves are tied together and wired to pulse controller “OUT 1”, and #2 solenoid valves are tied together and wired to pulse controller “OUT 2”, etc. Refer to Figure 14 for the FJH dust collector solenoid valve wiring information. When cleaning, the pulse valves sequence left to right, top to bottom.

Unless specified on the UAS sales order, the customer will supply interconnecting material (conduit, wiring, etc.) from the pulse controls to the dust collector.

HEATER WIRING

In cold or damp environments, the heater serves to prevent the electric solenoid valves from freezing due to cold temperatures or condensation. If optional solenoid valve heaters are purchased, each solenoid valve enclosure will contain a 100-WATT cartridge heater internally prewired to a thermostat.

The customer must supply a separate, 100-130VAC, 50-60Hz, 1 amp supply power to the heater circuit for each module. The supply must be available to the module solenoid valve enclosure(s) at all time (even when the blower is shut down) to ensure that the temperature regulation inside each solenoid valve enclosure is continual.

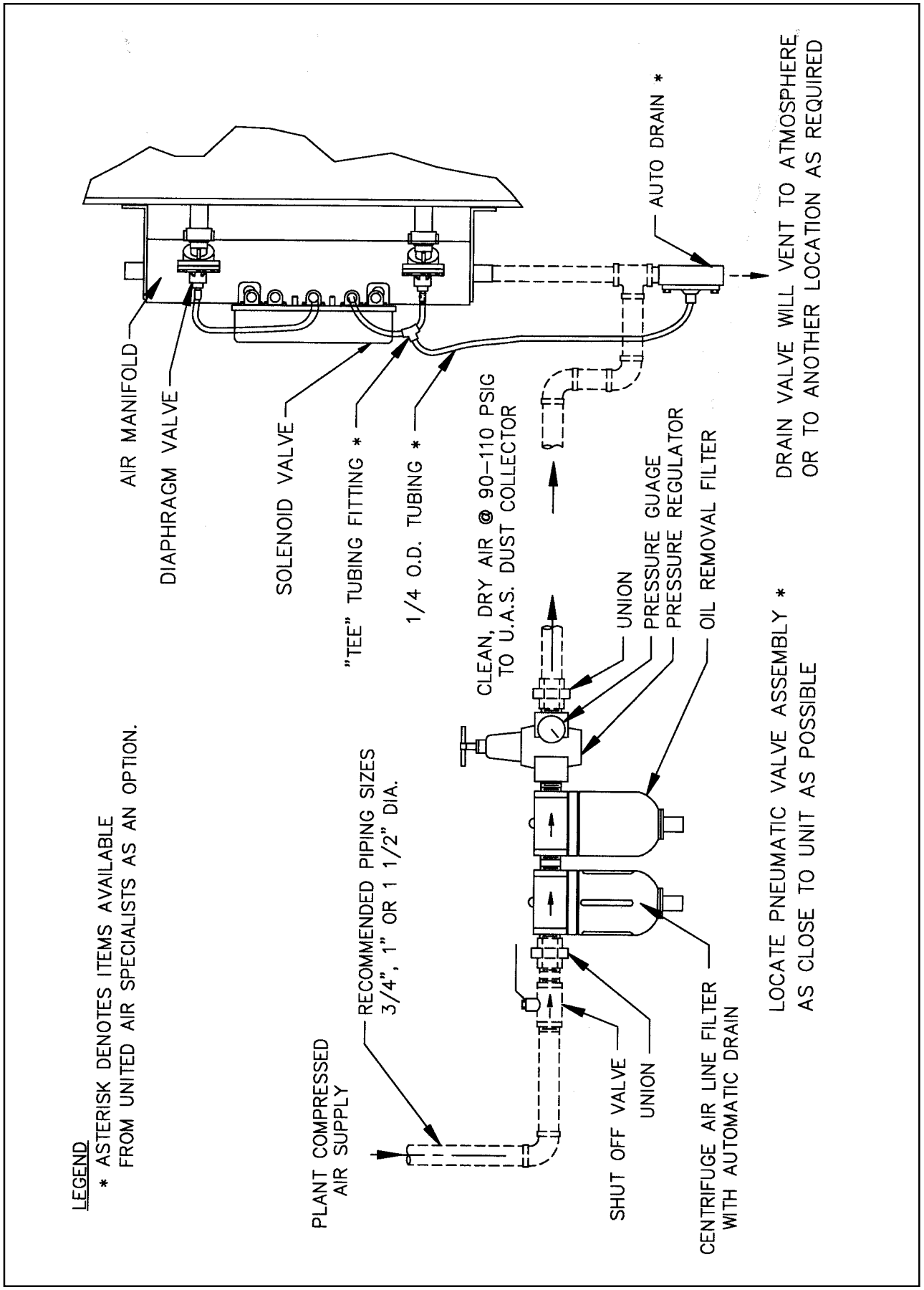

LEGEND
* ASTERISK DENOTES ITEMS AVAILABLE FROM UNITED AIR SPECIALISTS AS AN OPTION.
AIR MANIFOLD
DIAPHRAGM VALVE
SOLENOID VALVE
"TEE" TUBING FITTING *
1/4 O.D. TUBING *
CLEAN, DRY AIR @ 90–110 PSIG TO U.A.S. DUST COLLECTOR
AUTO DRAIN *
DRAIN VALVE WILL VENT TO ATMOSPHERE OR TO ANOTHER LOCATION AS REQUIRED
UNION
PRESSURE GUAGE
PRESSURE REGULATOR
OIL REMOVAL FILTER
RECOMMENDED PIPING SIZES 3/4", 1" OR 1 1/2" DIA.
PLANT COMPRESSED AIR SUPPLY
SHUT OFF VALVE
UNION
CENTRIFUGE AIR LINE FILTER WITH AUTOMATIC DRAIN
LOCATE PNEUMATIC VALVE ASSEMBLY * AS CLOSE TO UNIT AS POSSIBLE

Figure 9. Typical Pneumatic Installation

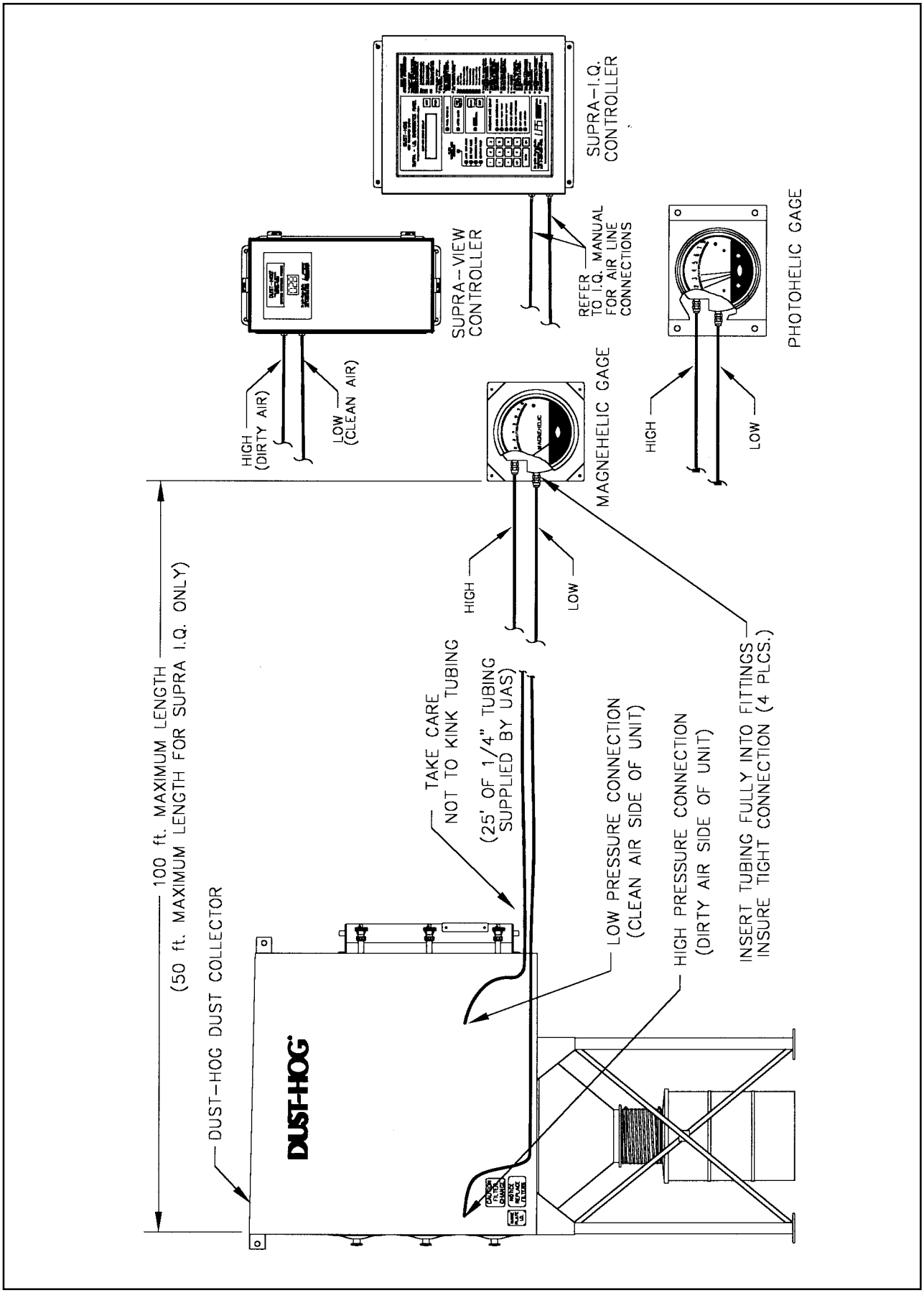
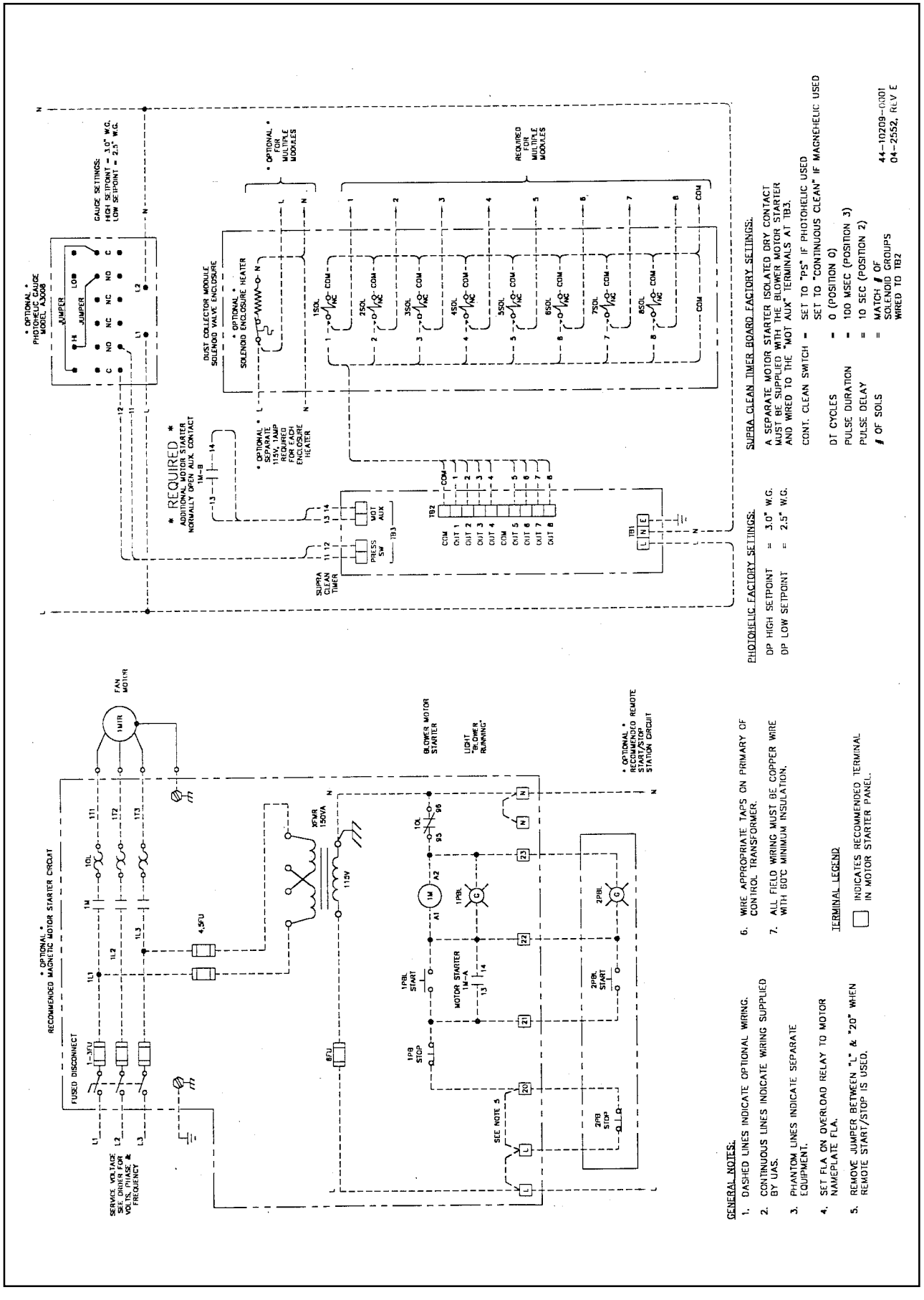

SUPRA-I.Q. CONTROLLER
SUPRA-VIEW CONTROLLER
REFER TO I.Q. MANUAL FOR AIR LINE CONNECTIONS
PHOTOHELIC GAGE
MAGNEHELIC GAGE
HIGH (DIRTY AIR)
LOW (CLEAN AIR)
HIGH
LOW
HIGH
LOW
100 ft. MAXIMUM LENGTH
(50 ft. MAXIMUM LENGTH FOR SUPRA I.Q. ONLY)
DUST-HOG DUST COLLECTOR
TAKE CARE NOT TO KINK TUBING
(25' OF 1/4" TUBING SUPPLIED BY UAS)
LOW PRESSURE CONNECTION (CLEAN AIR SIDE OF UNIT)
HIGH PRESSURE CONNECTION (DIRTY AIR SIDE OF UNIT)
INSERT TUBING FULLY INTO FITTINGS INSURE TIGHT CONNECTION (4 PLCS.)
DUSTHOG

Figure 10. Pressure Gage Installation Diagram

Figure 11. Power and Elementary Wiring for Units with Supra-Clean Timerboard and Magnehelic/Photohelic Control


* OPTIONAL * PHOTOHELIC GAUGE MODEL AJ3008
JUMPER
GAUGE SETTINGS:
HIGH SETPOINT = 3.0" W.G.
LOW SETPOINT = 2.5" W.G.
DUST COLLECTOR MODULE SOLENOID VALVE ENCLOSURE
* OPTIONAL * SOLENOID ENCLOSURE HEATER
* OPTIONAL * FOR MULTIPLE MODULES
REQUIRED FOR MULTIPLE MODULES
* REQUIRED * ADDITIONAL MOTOR STARTER NORMALLY OPEN AUX CONTACT 1M-B
* OPTIONAL * SEPARATE 115V, 1AMP REQUIRED FOR COLD ENCLOSURE HEATER
SUPRA CLEAN TIMER
PRESS SW
MOT AUX
TB3
TB2
TB1
1SOL
2SOL
3SOL
4SOL
5SOL
6SOL
7SOL
8SOL
COM
PHOTOHELIC FACTORY SETTINGS:
DP HIGH SETPOINT = 3.0" W.G.
DP LOW SETPOINT = 2.5" W.G.
SUPRA CLEAN TIMER BOARD FACTORY SETTINGS:
A SEPARATE MOTOR STARTER ISOLATED DRY CONTACT MUST BE SUPPLIED WITH THE BLOWER MOTOR STARTER AND WIRED TO THE "MOT AUX" TERMINALS AT TB3.
CONT. CLEAN SWITCH - SET TO "PS" IF PHOTOHELIC USED
SET TO "CONTINUOUS CLEAN" IF MAGNEHELIC USED
DT CYCLES - 0 (POSITION 0)
PULSE DURATION - 100 MSEC (POSITION 3)
PULSE DELAY = 10 SEC (POSITION 2)
OF SOLS = MATCH # OF SOLENOID GROUPS WIRED TO TB2
44-10209-A001
04-2552, REV E
RECOMMENDED MAGNETIC MOTOR STARTER CIRCUIT
* OPTIONAL *
FUSED DISCONNECT
SERVICE VOLTAGE SEE DATA PLATE FOR VOLTS, PHASE & FREQUENCY
1-3FU
1M
1OL
4.5FU
8FU
XFMR 150VA
115V
FAN MOTOR
1MR
BLOWER MOTOR STARTER
LIGHT "BLOWER RUNNING"
1PB START
1PB STOP
MOTOR STARTER 1M-A
1PBL
2PBL
2PB START
2PB STOP
SEE NOTE 5
* OPTIONAL * RECOMMENDED REMOTE START/STOP STATION CIRCUIT
GENERAL NOTES:
1. DASHED LINES INDICATE OPTIONAL WIRING.
2. CONTINUOUS LINES INDICATE WIRING SUPPLIED BY UAS.
3. PHANTOM LINES INDICATE SEPARATE EQUIPMENT.
4. SET FLA ON OVERLOAD RELAY TO MOTOR NAMEPLATE FLA.
5. REMOVE JUMPER BETWEEN "L" & "20" WHEN REMOTE START/STOP IS USED.
6. WIRE APPROPRIATE TAPS ON PRIMARY OF CONTROL TRANSFORMER.
7. ALL FIELD WIRING MUST BE COPPER WIRE WITH 60°C MINIMUM INSULATION.
TERMINAL LEGEND
INDICATES RECOMMENDED TERMINAL IN MOTOR STARTER PANEL.

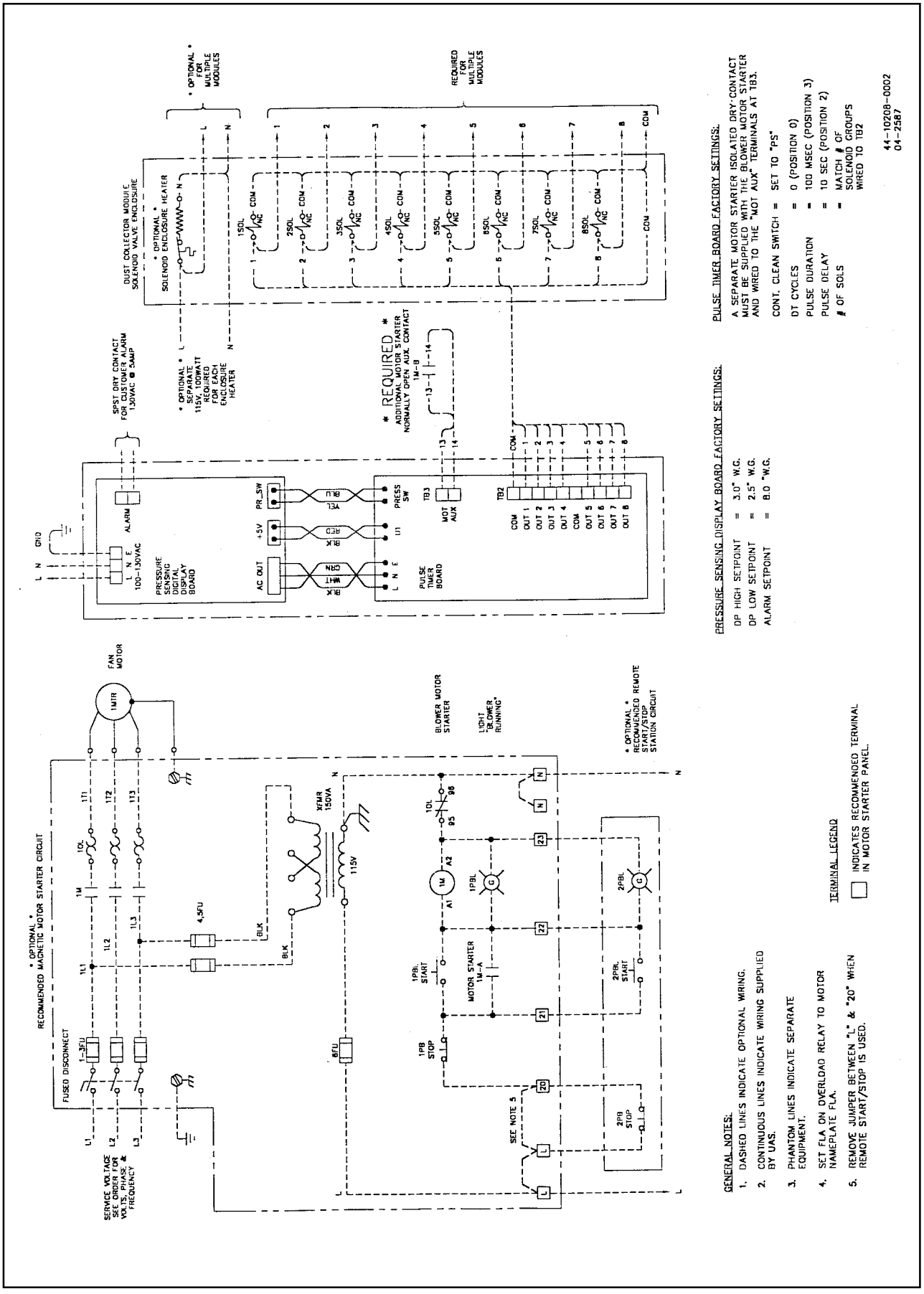
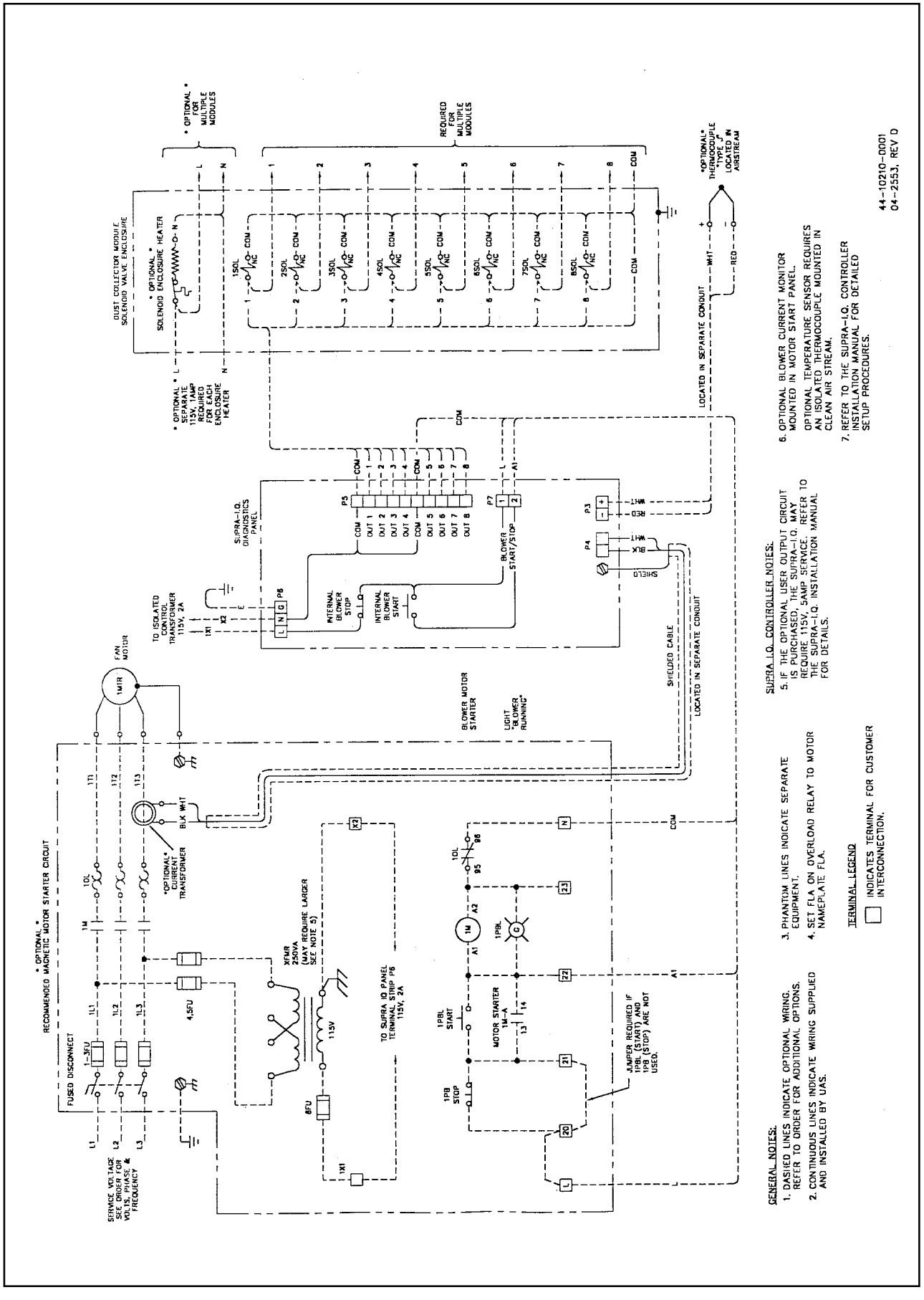


Figure 12. Power and Elementary Wiring for Units with Supra-View Panel

Figure 13. Power and Elementary Wiring for Units with Supra-I.Q. Diagnostics Panel



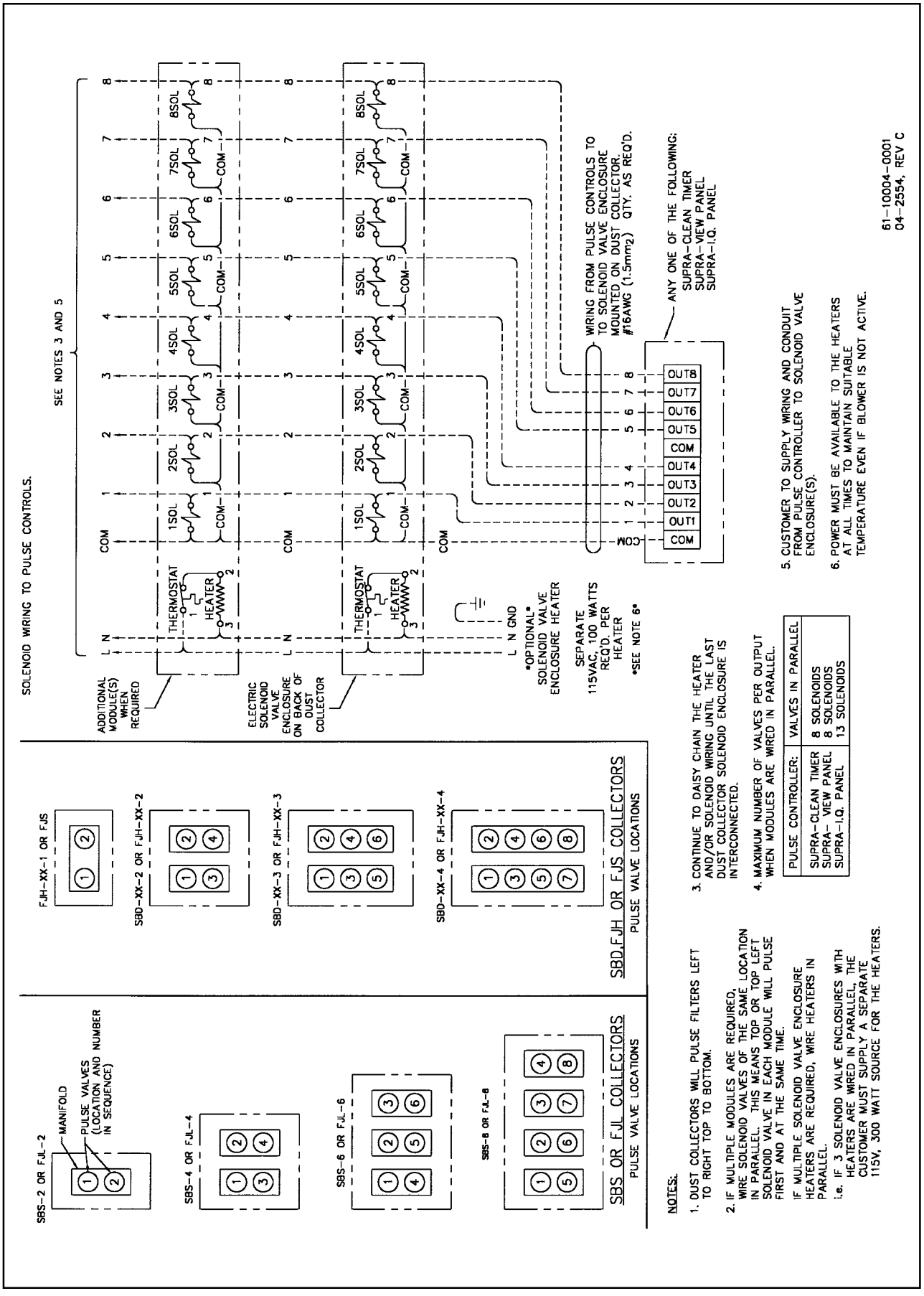
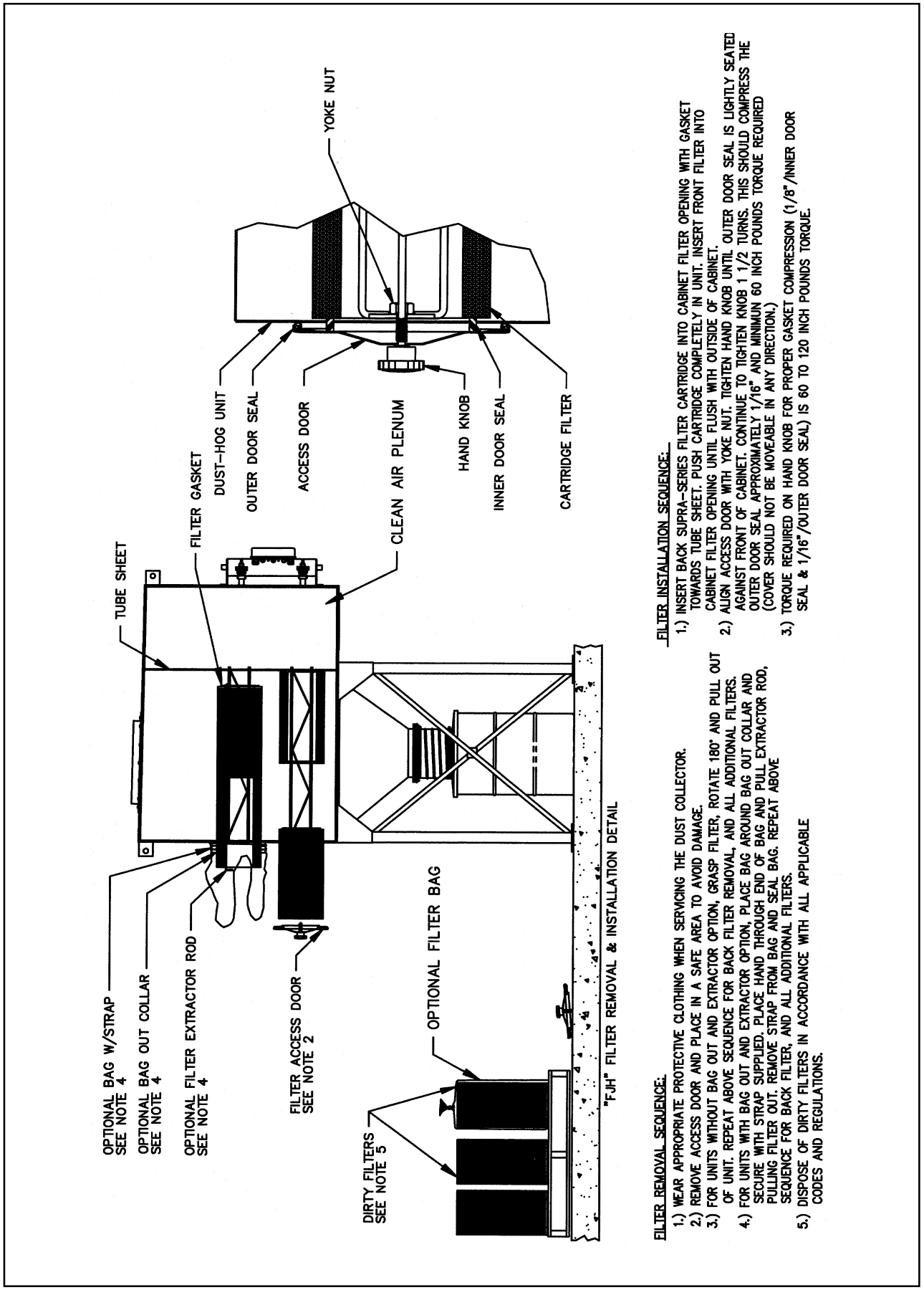

SOLENOID WIRING TO PULSE CONTROLS.
SEE NOTES 3 AND 5
ADDITIONAL MODULE(S) WHEN REQUIRED
ELECTRIC SOLENOID VALVE ENCLOSURE ON BACK OF DUST COLLECTOR
THERMOSTAT
HEATER
1SOL
2SOL
3SOL
4SOL
5SOL
6SOL
7SOL
8SOL
COM
L N
L N GND
OPTIONAL SOLENOID VALVE ENCLOSURE HEATER
SEPARATE 115VAC, 100 WATTS REQ'D. PER HEATER
SEE NOTE 6
WIRING FROM PULSE CONTROLS TO TO SOLENOID VALVE ENCLOSURE MOUNTED ON DUST COLLECTOR. #16AWG (1.5mm2) QTY. AS REQ'D.
ANY ONE OF THE FOLLOWING:
SUPRA-CLEAN TIMER
SUPRA-VIEW PANEL
SUPRA-I.Q. PANEL
OUT1
OUT2
OUT3
OUT4
OUT5
OUT6
OUT7
OUT8
SBS-2 OR FJL-2
MANIFOLD
PULSE VALVES (LOCATION AND NUMBER IN SEQUENCE)
SBS-4 OR FJL-4
SBS-6 OR FJL-6
SBS-8 OR FJL-8
SBS OR FJL COLLECTORS
PULSE VALVE LOCATIONS
FJH-XX-1 OR FJS
SBD-XX-2 OR FJH-XX-2
SBD-XX-3 OR FJH-XX-3
SBD-XX-4 OR FJH-XX-4
SBD,FJH OR FJS COLLECTORS
PULSE VALVE LOCATIONS
NOTES:
1. DUST COLLECTORS WILL PULSE FILTERS LEFT TO RIGHT TOP TO BOTTOM.
2. IF MULTIPLE MODULES ARE REQUIRED, WIRE SOLENOID VALVES OF THE SAME LOCATION IN PARALLEL. THIS MEANS TOP OR TOP LEFT SOLENOID VALVE IN EACH MODULE WILL PULSE FIRST AND AT THE SAME TIME.
IF MULTIPLE SOLENOID VALVE ENCLOSURE HEATERS ARE REQUIRED, WIRE HEATERS IN PARALLEL.
i.e. IF 3 SOLENOID VALVE ENCLOSURES WITH HEATERS ARE WIRED IN PARALLEL, THE CUSTOMER MUST SUPPLY A SEPARATE 115V, 300 WATT SOURCE FOR THE HEATERS.
3. CONTINUE TO DAISY CHAIN THE HEATER AND/OR SOLENOID WIRING UNTIL THE LAST DUST COLLECTOR SOLENOID ENCLOSURE IS INTERCONNECTED.
4. MAXIMUM NUMBER OF VALVES PER OUTPUT WHEN MODULES ARE WIRED IN PARALLEL.
PULSE CONTROLLER: | VALVES IN PARALLEL
SUPRA-CLEAN TIMER | 8 SOLENOIDS
SUPRA- VIEW PANEL | 8 SOLENOIDS
SUPRA-I.Q. PANEL | 13 SOLENOIDS
5. CUSTOMER TO SUPPLY WIRING AND CONDUIT FROM PULSE CONTROLLER TO SOLENOID VALVE ENCLOSURE(S).
6. POWER MUST BE AVAILABLE TO THE HEATERS AT ALL TIMES TO MAINTAIN SUITABLE TEMPERATURE EVEN IF BLOWER IS NOT ACTIVE.
61-10004-0001
04-2554, REV C

Figure 14. Solenoid Wiring to Pulse Controls

Figure 15. Supra-Pulse Cartridge Filter Installation / Removal


YOKE NUT
DUST-HOG UNIT
OUTER DOOR SEAL
ACCESS DOOR
CLEAN AIR PLENUM
HAND KNOB
INNER DOOR SEAL
CARTRIDGE FILTER
FILTER GASKET
TUBE SHEET
OPTIONAL BAG W/STRAP SEE NOTE 4
OPTIONAL BAG OUT COLLAR SEE NOTE 4
OPTIONAL FILTER EXTRACTOR ROD SEE NOTE 4
FILTER ACCESS DOOR SEE NOTE 2
OPTIONAL FILTER BAG
DIRTY FILTERS SEE NOTE 5
"FJH" FILTER REMOVAL & INSTALLATION DETAIL
FILTER INSTALLATION SEQUENCE:
1.) INSERT BACK SUPRA-SERIES FILTER CARTRIDGE INTO CABINET FILTER OPENING WITH GASKET TOWARDS TUBE SHEET. PUSH CARTRIDGE COMPLETELY IN UNIT. INSERT FRONT FILTER INTO CABINET FILTER OPENING UNTIL FLUSH WITH OUTSIDE OF CABINET.
2.) ALIGN ACCESS DOOR WITH YOKE NUT. TIGHTEN HAND KNOB UNTIL OUTER DOOR SEAL IS LIGHTLY SEATED AGAINST FRONT OF CABINET. CONTINUE TO TIGHTEN KNOB 1 1/2 TURNS. THIS SHOULD COMPRESS THE OUTER DOOR SEAL APPROXIMATELY 1/16" AND MINIMUN 60 INCH POUNDS TORQUE REQUIRED (COVER SHOULD NOT BE MOVEABLE IN ANY DIRECTION.)
3.) TORQUE REQUIRED ON HAND KNOB FOR PROPER GASKET COMPRESSION (1/8"/INNER DOOR SEAL & 1/16"/OUTER DOOR SEAL) IS 60 TO 120 INCH POUNDS TORQUE.
FILTER REMOVAL SEQUENCE:
1.) WEAR APPROPRIATE PROTECTIVE CLOTHING WHEN SERVICING THE DUST COLLECTOR.
2.) REMOVE ACCESS DOOR AND PLACE IN A SAFE AREA TO AVOID DAMAGE.
3.) FOR UNITS WITHOUT BAG OUT AND EXTRACTOR OPTION, GRASP FILTER, ROTATE 180° AND PULL OUT OF UNIT. REPEAT ABOVE SEQUENCE FOR BACK FILTER REMOVAL, AND ALL ADDITIONAL FILTERS.
4.) FOR UNITS WITH BAG OUT AND EXTRACTOR OPTION, PLACE BAG AROUND BAG OUT COLLAR AND SECURE WITH STRAP SUPPLIED. PLACE HAND THROUGH END OF BAG AND PULL EXTRACTOR ROD, PULLING FILTER OUT. REMOVE STRAP FROM BAG AND SEAL BAG. REPEAT ABOVE SEQUENCE FOR BACK FILTER, AND ALL ADDITIONAL FILTERS.
5.) DISPOSE OF DIRTY FILTERS IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.

When multiple module solenoid valve enclosures with heaters are installed, daisy chain the wiring so that each heater will have 100/115/VAC, 50/60Hz at all times. Make certain enough current is available to supply all heaters.

Example: If three solenoid valve enclosures are supplied with cartridge heaters, make certain the voltage supply can deliver 3 amps (1 amp per heater).

5. OPERATION

⚠ CAUTION

Shut off unit disconnect and lock out all electrical power to the dust collector prior to performing service work.

⚠ CAUTION

Prior to unit start-up, all installation set-up instructions must be completed as specified by this manual, Supra-Clean *Installation and Operation Manual*, Supra-View *Installation and Operation Manual*, Supra-I.Q. *Installation and Operation Manual*, as well as any manuals supplied by other equipment manufacturers, as they apply to your dust collector.

5.1 START UP

Inspect the installation area and make certain no tools, parts, etc. have been left anywhere on or inside the FJH unit. Check blower discharge to make certain it is free from all debris.

Start motor/blower and check for proper rotation. A rotation arrow is located on the blower housing. All top-mount blower assemblies rotate in a clockwise rotation as viewed from the driven end (motor end with motor cooling fan). If the blower is rotating in the opposite direction, disconnect the power to the motor starter. For 3-phase blowers, interchange any two power wires to the motor at the load side of the motor starter contactor. For single-phase power, refer to motor nameplate for which two wires to interchange at motor junction box. Engage starter disconnect, start blower and recheck rotation.

NOTE: Proper blower rotation is required to move the designed amount of air. A blower rotating in the incorrect direction will only move about 40% of design airflow.

⚠ CAUTION

The blower assembly provided by United Air Specialist, Inc. includes an outlet damper. If the blower assembly was purchased separately, ensure a volume control damper is included somewhere in the dust collection system. Close the blower discharge damper to 50% open position and tighten in place. If a volume control damper is provided in another part of the dust collection system, adjust second damper to the 50% open position and tighten in place.

NOTE: It is important that the air volume of the dust collection system is at design conditions at system start-up. There is a minimal pressure differential across new cartridge filters. If the volume control damper is not correctly adjusted, the air volume will be above design conditions for airflow and may affect the cartridge filter life.

⚠ CAUTION

Verify dust collector system airflow is adjusted to design conditions with new, clean filters using the volume control dampers installed in the system. Failure to properly adjust system airflow may affect cartridge filter life.

The air volume should be adjusted based on the performance of the entire system. Air volume control damper should be adjusted to the system design conditions. Closing the volume damper decreases system airflow. Opening the volume damper increases system airflow.

On certain applications, it may be beneficial to “seed” or pre-coat the original or replacement cartridge filters. This process introduces a certain amount of coating (usually crushed limestone, agricultural lime or other specifically marketed pre-coat) in light concentration to deposit a thin coating of material which acts as an aid to filtration. This deposited dust cake keeps the dust loading on the surface of the cartridge filter. This process will increase filter life and efficiency while allowing the cleaning system to work more effectively. For filter seeding procedures, refer to Section 6.2.

Turn on the compressed air supply to the dust collector air manifold reservoir. Adjust the pressure regulator until the gauge reads 90-110PSIG (6.2-7.6BAR).

5.2 CHECKLIST

Check the discharge of the blower assembly. Initially, some dust may discharge from the blower assembly as the filters are seasoned. This may last several minutes after which the discharge air should remain visibly clean.

Measure the total airflow and static pressure at the inlet to the Supra-Blast unit. Adjust the blower outlet damper for the desired airflow. Check to ensure that adequate air is being drawn into each of the collection points of the system. Adjust the individual dampers for each operation to balance the system airflow. Recheck the total system airflow and adjust the blower damper to desired system airflow. This procedure may need to be repeated several times until the entire system is within system design airflow specifications.

Check the differential pressure reading across the dust collector clean-to-dirty air sections. A normal differential pressure drop reading is between 1"-6" w.g. (25-152mmAq). At start-up, this reading is generally in the 1"-3" w.g. (25-76mmAg) range. Please list the reading here for future reference.

Initial dust collector differential pressure reading across filters is _____ " w.g. or (_____mmAg) on _____ (date).

NOTE: If your system is controlled by the Supra-I.Q. Diagnostics Panel, the yellow air flow alert light may be illuminated. This is normal until the “Air Flow Calibration” routine has been performed at the Supra-I.Q. Diagnostics Panel. This must be performed during start-up of your collection system once all of the inlet(s) and duct work is in place and the outlet damper (if required) is opened 75%. Refer to the Supra-I.Q. *Installation and Operation Manual* and perform the “Code 4 - Air Flow Settings” steps.

5.3 CHECKING THE PULSE CLEANING SYSTEM WITH YOUR CONTROLLER

Check the cleaning system for proper operation. The Compressed air pressure should be between 90-110PSIG (6.2 - 7.6BAR). The Supra-Clean, Supra-View and Supra-I.Q. panels are factory set to pulse every 10 seconds. Refer to the Supra-Clean, Supra-View or Supra-I.Q. *Installation and Operation Manual* to change these initial settings. Check to ensure the pulse (diaphragm) valves are “firing” at approximately 10-second intervals and deliver a crisp sounding pulse to each filter. The valves should not deliver a weak or lingering pulse. To check the pulse sequence for proper firing, perform the following:

- If your system is supplied with a Supra-Clean timerboard (with Magnehelic or Photohelic Gage) or Supra-View Panel, place the “Continuous Clean/PS” switch on the timerboard to the “Continuous Clean” position. The MOT AUX terminals at the timerboard must have continuity for the pulsing to become active. Energize the motor starter coil to close the isolated auxiliary contact wired to the timerboard MOT AUX terminals. Verify robust and consistent pulse firing of each valve.
- If your system is supplied with a Supra-I.Q. Diagnostics Panel, place the system in “Continuous Clean” by entering Code 5. At the “SET MODE” state enter “1” for Continuous cleaning. Terminals 1 and 2 at terminal strip P7 must have continuity for the cleaning system to activate. This can be done by placing a temporary jumper across 1 and 2 to activate the cleaning sequence. Please allow 45 seconds after panel power up for pulsing to start as the Supra-I.Q. cleaning mode(s) operate on a delay. Verify robust and consistent pulse firing of each valve. When test is complete, enter code 5 and at the “SET MODE” state enter “2” for Autotune cleaning mode.

5.4 OPERATING ADJUSTMENTS

Please confirm the type of pulse cleaning controller delivered with your system. Your system was delivered with one of the following types:

- Magnehelic Gage with Supra-Clean timerboard
- Photohelic Gage with Supra-Clean timerboard
- Supra-View Pulse Panel
- Supra-I.Q. Diagnostics Panel

NOTE: It is important that the compressed air pressure in the manifold is above 90 PSIG immediately prior to a pulse. If the delivery capability of your compressed air source cannot return the manifold pressure to above 90 PSIG during the “Pulse Delay” (time between pulses) interval, adjust the pulse delay at the timerboard or Supra-I.Q. Panel and monitor the pressure drop. A longer interval will raise the operating differential pressure and a shorter will interval will lower the operating differential pressure. Allow sufficient time for the system to stabilize after each adjustment before further adjustment is made. Adjust until the desired pressure differential is reached.

MAGNEHELIC GAGE CONTROL WITH SUPRA-CLEAN TIMERBOARD

When using a Magnehelic Gage with Supra-Clean pulse timerboard, the timerboard is always set to "Continuous Clean" pulse mode. If the filters are operating at a higher or lower differential pressure than desired, adjusting the pulse frequency (Pulse Delay) can often modify the steady-state pressure differential. The factory setting is 10-second intervals. Adjust the "Pulse Delay" on the Supra-Clean timerboard and monitor the pressure drop on the Magnehelic Gage. A longer interval will raise the operating differential pressure and a shorter interval will lower the operating differential pressure. Allow sufficient time for the system to stabilize after each adjustment before further adjustment is made. Adjust unit the desired pressure differential is reached.

PHOTOHELIC GAGE CONTROL WITH SUPRA-CLEAN TIMERBOARD

When using a Photohelic Gage with Supra-Clean pulse timerboard, the timerboard can set to "PS" pulse mode (pulse cleaning activated by the Photohelic control) or "Continuous Clean" pulse mode to override the Photohelic Gage. With the Photohelic Gage control, the desired pressure differential can be maintained by adjusting the high and low setpoints on the gauge. Adjust the upper setpoint to the desired differential pressure setting plus 0.25" (factory recommended setting is 3"). Adjust the lower setpoint to the desired setting minus 0.25" (factory recommended setting is 2.5"). This allows a 0.5" "deadband" and the pulse system will maintain the desired differential pressure (factory recommended operating point is 2.75"). If the differential pressure remains above the desired operating point, the pulse frequency can be increased (shorter "Pulse Delay") as previously described. The high and low needle setpoints on the Photohelic Gage can be adjusted as the filters season and continuous pulsing occurs. Adjust both needles upward in 0.5" increments until pulsing stops. Continue adjustments, when required, until the high setpoint reaches 6". No further adjustments should be made above 6" w.g.

SUPRA-VIEW PULSE PANEL

When using the Supra-View panel, the pulsing controls can be set to "PS" pulse mode ("On-Demand" cleaning similar to Photohelic control) or "Continuous Clean" pulse cleaning. The Supra-View comes standard with a cartridge differential measurement/display, pulse time sequence controls and a "Customer usable" high cartridge pressure alarm contact all in one enclosed assembly. The high, low and alarm setpoints are adjusted by opening the enclosure door and adjusting the appropriate selector switches for desired control. Adjustments to the setpoints can only be done with the door open. Refer to the Supra-View *Installation and Operation Manual* for adjustment details, or look on the inside of the Supra-View enclosure door for operating instructions.

SUPRA-I.Q. DIAGNOSTIC PANEL

The Supra-I.Q. Diagnostics Panel can be set to operate in Continuous Clean, Setpoint Clean (similar to Photohelic control), or "Autotune" Clean mode. Autotune mode is designed to conserve compressed air usage while maintaining lowest possible cartridge differential pressure. It allows the minimal amount of compressed air usage while maximizing filter life. In Autotune mode, the controller will automatically adjust the filter differential pressure to obtain the most cost-effective setting. Please refer to the Supra-I.Q. *Installation and Operation Manual* for a complete listing of operating parameters and adjustment instructions.

ALL CONTROL OPTIONS

As filter cartridges become loaded with dust, the differential pressure across the filters will increase. This will result in a loss of air volume. Should the dust collection capture effectiveness be reduced, open the flow control damper to return the system to the original design air volume.

6. SERVICE

BEFORE SERVICING, NOTE THE FOLLOWING:

1. Disconnect electrical power to the unit and control panel.
2. Shut off and slowly bleed compressed air supply from the manifold.
3. Collected dust may be hazardous. Consult proper authorities for handling and disposal.
4. Collected dust may be a potential fire hazard. Welding, grinding or operations involving open flames should NOT be performed without fire protection measures in place. Refer to Section 1 of this manual for additional precautions.
5. Wear appropriate protective clothing when servicing the dust collector.
6. Disposal of collected dust must be according to state and local environmental regulations.

6.1 CARTRIDGE FILTER REMOVAL AND REPLACEMENT (FIGURE 15)

The Supra-Series cartridge filters are the only replacement filters that will provide the high level of performance that is expected from the Supra-Pulse dust collector.

Replacement cartridge filters should be ordered when the differential pressure is consistently above 6" w.g. or system airflow is inadequate. To order filters, call 1-800-252-4647. The following procedure should be used to replace the filters:

1. Start with the top access covers. Remove each access cover by turning the knob counterclockwise. Tilt cover back away from the unit when free from the support yoke to trap any dust on the inside of the access cover. Dispose of dust into a suitable container. Set the cover aside.
2. Move the filter from side to side to break the gasket seal between the filter and the tube sheet. Rotate the filter 180 degrees to allow the dust on top of the cartridge to fall into the dust collection hopper.
3. Slide the filter out of the unit along the support yoke and transfer to a suitable disposal container. Repeat this procedure for remaining filters.
4. Inspect the tube sheet and make certain the gasket sealing area is free of dust to ensure proper sealing of the new filter. Make certain the area is dry after cleaning process is complete.
5. Install a new Supra-Series cartridge filter on each support yoke, GASKET END first. Clean the access cover gaskets and reinstall the cover onto the support yoke. Tighten the knob until the outer door gasket seats against the cabinet. Continue to tighten the knob 1 1/2 turns. The maximum torque on the door knob is 120 inch-pounds.

NOTE: The access cover must be securely tightened to ensure compression of the filter gasket. Dust leakage (bypass) can occur if the filter gasket is not properly sealed.

6. The Supra-Pulse unit is now ready to be placed in service. Reconnect electrical power and air supply. Please follow initial start-up checklist to ensure proper unit performance.

6.2 CARTRIDGE FILTER SEEDING PROCEDURES

Before seeding the filters, remove any afterfilter because a small amount of particulate will pass through the cartridge filter initially. To begin seeding the filters, turn the cleaning system “off,” then turn unit “on.” Introduce the seeding material by slowly and gently shaking the material next to an extraction hood or into the drum lid opening (remove drum) where it can be drawn into the unit. The seed material should be drawn in as a continual “cloud,” trying to avoid any dust “slugs.” Continue to feed the seeding material until the reading on the filter monitor gauge increases by approximately 1" w.g. Replace the afterfilter, if applicable, and the dust storage drum, if removed, before starting the unit.

6.3 DUST REMOVAL

NOTE: Do not let the dust storage drum overfill. This can cause poor collector performance and require an extensive clean-up due to overflow of dust when removing the container(s).

Turn off the dust collector and empty the dust storage drum an necessary to prevent dust from accumulating in the hopper. Empty the dust storage drum when 2/3 full. If the hopper has a slide gate, close the gate before removing the dust storage drum. The collector fan does not have to be shut off if this slide gate procedure is followed. Remember to open the slide gate when the dust storage drum is replaced.

6.4 SERVICING THE COMPRESSED AIR COMPONENTS

⚠ CAUTION

Shut off and slowly release the pressure in the compressed air piping and/or the Supra-Pulse compressed air reservoir manifolds prior to servicing this equipment.

1. The compressed air system should be periodically checked to ensure clean, dry air is delivered to the Supra-Pulse. Check the compressed air components and service as recommended by the manufacturer.
2. Periodically check the air manifold(s) for contaminants and drain any condensed liquid from the manifold.
3. With the compressed air supply turned on, check the cleaning valves, solenoid valves and the tubing between them for any air leakage. Replace any components that are defective.

6.5 SERVICING THE DIRECT DRIVE MOTOR AND FAN

⚠ CAUTION

All electrical work should be done by a qualified electrician in accordance with local electrical codes. Disconnect electrical power before installing or servicing any electrical component.

Periodically inspect the fan blades to ensure proper fan life. Clean the fan for any deposited material if required. Grease motor every 3,600 hours with high grade ball and roller bearing grease. Recommended greases are Shell Dolium R or Chevron SRI.

6.6 SERVICING OPTIONAL RETURN AIR SAFETY FILTERS/HEPA FILTERS

Periodically check the pressure drop across the safety filters, replace when the differential pressure exceeds 2" w.g. For HEPA filters, replace when the differential pressure exceeds 3" w.g.

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Teflon® is a registered trademark of E.I. DuPont de Nemours & Co.

7. TROUBLESHOOTING GUIDE

Use the troubleshooting guide to correct any problems that occur with your dust collection unit. If the problem or condition continues, contact the nearest UAS customer service office listed on the back cover of this manual.

⚠ CAUTION

All electrical wiring troubleshooting should be performed by a qualified electrician in accordance with local electrical codes.

⚠ WARNING

All electrical/mechanical troubleshooting should be performed by a qualified electrical/maintenance individual familiar with UAS equipment.

⚠ CAUTION

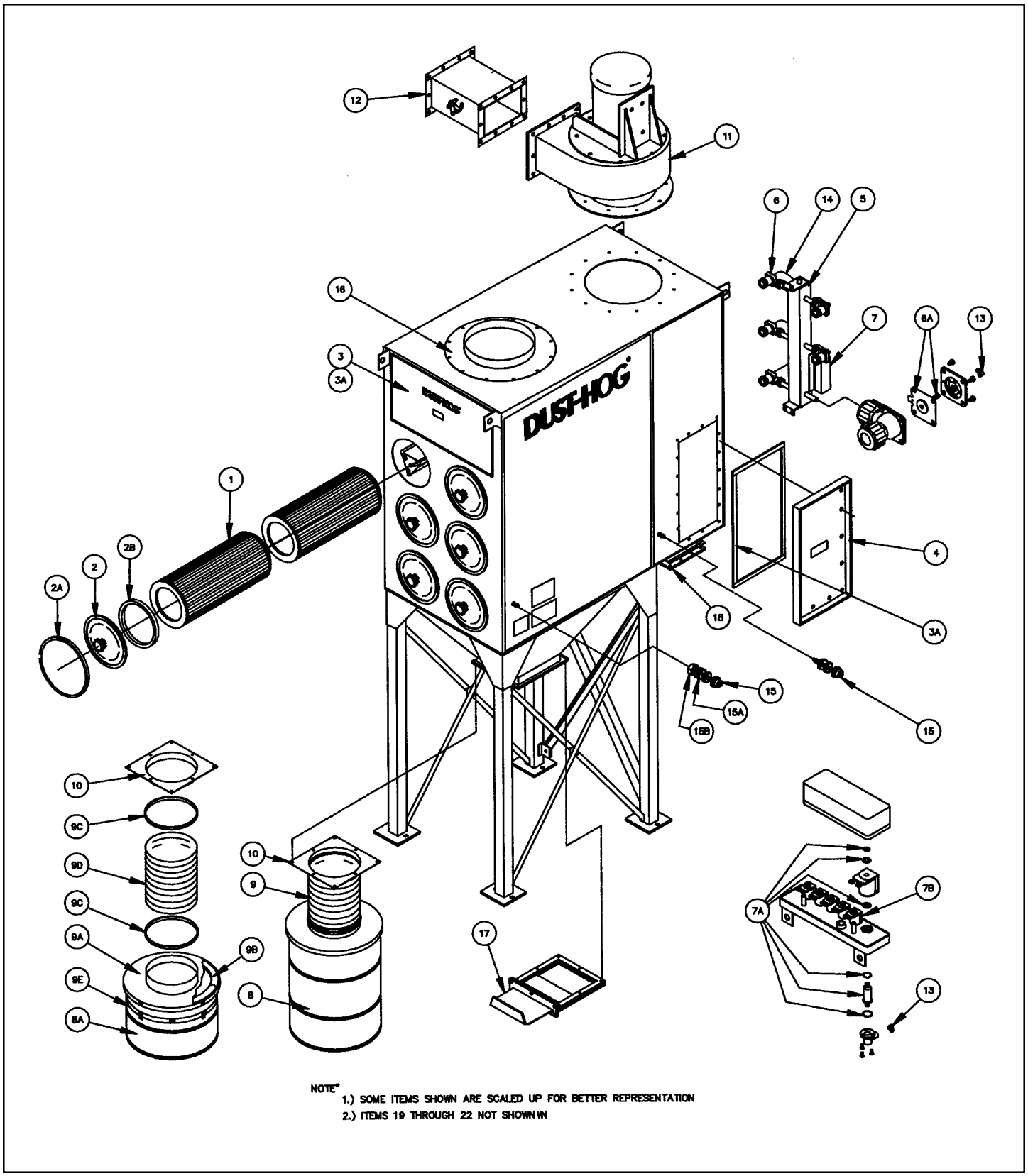
Prior to troubleshooting any equipment, read the Installation and Operation Manuals for each piece of equipment to be serviced.

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
Fan motor won't start or won't stay running.	Input circuit not operational.	Check input to motor circuits for proper voltage on all legs.
	Improper electrical wiring.	Check and correct internal motor wiring for proper connections based on the incoming line voltage. Wiring diagram is found on lead access plate.
	Starter overloads tripped.	Check for proper motor starter overload rating against full load amps on the motor nameplate. Adjust or replace overloads as required.
	Hopper discharge is open to atmosphere.	Ensure drum is properly sealed against drum lid package. Ensure drum lid package is properly installed. (See page 11.)
	Fan damper not properly adjusted.	Check motor current draw and close fan or silencer damper until amperage draw is below full load amp rating of motor.
Dust emissions from clean air discharge.	Filters not installed properly.	Inspect and reinstall filter cartridges. (See page 24.)
	Filters damaged.	Replace any damaged filters with new Supra-Series filters.
	Filter access doors not installed properly.	Tighten access doors securely. (See page 24.)
Insufficient airflow.	Fan rotation is backwards.	If the fan is not rotating in the correct direction, see page 21 to reverse the rotation.
	Loose or open access door.	Tighten access door and drum lid connection.
	Duct damper(s) or fan outlet damper not positioned properly.	Adjust dampers to allow for sufficient air volume.
	Air inlet(s) obstructed.	Inspect and clean all hoods or other machine connections.
	Filters plugged.	Refer to troubleshooting procedures for continual pressure drop.

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
Continual, excessive pressure drop (over 7") on filter monitor gauge.	Compressed air supply problems.	Check incoming compressed air for proper pressure (90-110 PSIG) and flow (1.50 cubic feet per pulse). Correct any problems.
	Pulse cleaning system not functioning properly.	Check incoming 110V power to pulse timer board. Check for blown fuse on timer board. Replace if necessary.
		Check for 110V output from timerboard If incoming voltage is correct and fuse is not blown, replace timer board.
	Photohelic Gage not adjusted properly.	Reduce high setpoint on Photohelic Gage to 3". Reduce low setpoint on Photohelic Gage to 2.5"
	Pulse system not adjusted properly.	Check for proper pulse valve operation. See page 22. Replace damaged parts as required.
	Pulse settings incorrect.	Adjust pulse-on time to 0.10 seconds. Adjust pulse-off time to 10 seconds. See page 22 for information on decreasing pulse-off time to enhance the cleaning performance.
	Dust storage area is full.	Empty drum and clean out hopper. See page 24.
	Filters are at the end of their useful life.	Replace filters. Order replacement Supra-Series filters from United Air Specialist, Inc. by the part number found on the filters or as listed in the front cover of this manual.

8. ILLUSTRATED PARTS

DUST-HOG® Supra-Pulse FJH Series



FJH-1 SERIES

Item No.	Part No.	Description	Quantity
1	33-xxxx	Cartridge Filter (view sticker on unit or on end of filter for part number)	4
2	02-5410	Access Cover Assembly FJH, with inside & outside gaskets	2
2A	42-0320	Gasket Outside, Filter Access Cover	2
2B	42-0312	Gasket Inside, Filter Access Cover	2
3	10-5728	Panel, Inspection, Front	1
3A	42-0163	Gasket Neoprene Sponge/per door	10 ft.
4	10-5728	Side Access Panels (optional) right or left side	1
5	18-1088	Air Manifold Weldment	1
6	07-0128-02	Diaphragm Valve — 1"	2
6A	07-0116	Diaphragm Repair Kit, 1" BUNA-N	1
7	20-1624-0502	Solenoid Valve Enclosure	1
7A	07-0133	Solenoid Valve Repair Kit	1
7B	20-1631	Replacement Solenoid Valve, 1/8"	2
8	45-0237	55-Gallon Drum	1
8A	18-1595	Short Drum	1
9	03-1105	Drum Lid Kit	1
9A	35-0303	Drum Lid with Gaskets, 14" Collar	1
9A	02-6114	Drum Lid with Gaskets & Latch Keepers, 14"	1
9B	42-0315	Gasket Section, Drum Lid	4
9C	15-0233	Hose Clamp, 14" Diameter	2
9D	15-0202-15	Flex Duct, 14" Diameter, 15" Long	1
9E	02-6115	Drum Lid Latch Kit Drum Band Assembly	1
10	18-0944	Adapter Plate Weldment	1
11	Call Factory	Exhaust Fan Assembly	1
12	Call Factory	Exhaust Damper Assembly	1
13	38-0814	Fitting—BS, Tube, Male, 90 Degrees	4
14	38-0780	Tubing—Polyethylene, 1/4" O.D. x .040 Wall	4 ft.
15	38-0781	1/4" Tubing Bulkhead Connector	2
15A	38-0808	Brass Coupling, 1/4"	1
15B	38-0827	Sintered Metal Dust Filter	1
16	18-0901-xx	Inlet Plate Weldment (xx = Specify Inlet Diameter, inches)	1
17	02-6041	14" Slide Gate Package	1
18	10-5687	Panel, Inspection, Bottom	1
19	20-3048	Supra-Clean Timer board	1
20	07-0135-08	0-8" Magnehelic Gage	1
20A	07-0135-09	0-4" Magnehelic Gage (used for afterfilters)	option
21	07-0522	0-8" Photohelic Gage	1
22	38-0780	1/4" Gauge Tubing	25 ft.

FJH-2 SERIES

Item No.	Part No.	Description	Quantity
1	33-xxxx	Cartridge Filter (View Sticker on unit or on end of filter for part number)	8
2	02-5410	Access Cover Assembly FJH, with inside & outside gaskets	4
2A	42-0320	Gasket Outside, Filter Access Cover	4
2B	42-0312	Gasket Inside, Filter Access Cover	4
3	10-5847	Panel, Inspection, Front	1
3A	42-0163	Gasket Neoprene Sponge/per door	10 ft.
4	10-5728	Side Access Panel (optional) right or left side	1
5	18-1044	Air Manifold Weldment	1
6	07-0128-02	Diaphragm Valve — 1"	4
6A	07-0116	Diaphragm Repair Kit, 1" BUNA-N	1
7	20-1624-0804	Solenoid Valve Enclosure	1
7A	07-0133	Solenoid Valve Repair Kit	1
7B	20-1631	Replacement Solenoid Valve, 1/8"	4
8	45-0237	55-Gallon Drum	1
8A	18-1595	Short Drum	1
9	03-1105	Drum Lid Kit	1
9A	02-0303	Drum Lid with Gaskets, 14" Collar	1
9A	02-6114	Drum Lid with Gaskets & Latch Keepers, 14"	1
9B	42-0315	Gasket Section, Drum Lid	4
9C	15-0233	Hose Clamp, 14" Diameter	2
9D	15-0202-15	Flex Duct, 14" Diameter, 15" Long	1
9E	02-6115	Drum Lid Latch Kit Drum Band Assembly	1
10	18-0944	Adapter Plate Weldment	1
11	Call Factory	Exhaust Fan Assembly	1
12	Call Factory	Exhaust Damper Assembly	1
13	38-0814	Fitting—BS, Tube, Male, 90 Degrees	8
14	38-0780	Tubing—Polyethylene, 1/4" O.D. x .040 Wall	8 ft.
15	38-0781	1/4" Tubing Bulkhead Connector	2
15A	38-0808	Brass Coupling, 1/4"	1
15B	38-0827	Sintered Metal Dust Filter 1/8"	1
16	18-1149-xx	Inlet Plate Weldment (xx = Specify Inlet Diameter, inches)	1
17	02-6041	14" Slide Gate Package	1
18	10-5687	Panel, Inspection, Bottom	1
19	20-3048	Supra-Clean Timer board	1
20	07-0135-08	0-8" Magnehelic Gage	1
20A	07-0135-04	0-4" Magnehelic Gage (used for afterfilter)	option
21	07-0522	0-8" Photohelic Gage	1
22	38-0780	1/4" Gauge Tubing	25 ft.

FJH-3 SERIES

Item No.	Part No.	Description	Quantity
1	33-xxxx	Cartridge Filter (View Sticker on unit or on end of filter for part number)	12
2	02-5410	Access Cover Assembly FJH, with inside & outside gaskets	6
2A	42-0320	Gasket Outside, Filter Access Cover	6
2B	42-0312	Gasket Inside, Filter Access Cover	6
3	10-5728	Panel, Inspection, Front	1
3A	42-0163	Gasket Neoprene Sponge/per door	10 ft.
4	10-5728	Side Access Panel (optional) right or left side	1
5	18-1035	Air Manifold Weldment	1
6	07-0128-02	Diaphragm Valve — 1"	6
6A	07-0116	Diaphragm Repair Kit, 1" BUNA-N	1
7	20-1624-0806	Solenoid Valve Enclosure	1
7A	07-0133	Solenoid Valve Repair Kit	1
7B	20-1631	Replacement Solenoid Valve, 1/8"	6
8	45-0237	55-Gallon Drum	1
8A	18-1595	Short Drum	1
9	03-1105	Drum Lid Kit	1
9A	02-0303	Drum Lid with Gaskets, 14" Collar	1
9A	02-6114	Drum Lid with Gaskets & Latch Keepers, 14"	1
9B	42-0315	Gasket Section, Drum Lid	4
9C	15-0233	Hose Clamp, 14" Diameter	2
9D	15-0202-15	Flex Duct, 14" Diameter, 15" Long	1
9E	02-6115	Drum Lid Latch Kit Drum Band Assembly	1
10	18-0944	Adapter Plate Weldment	1
11	Call Factory	Exhaust Fan Assembly	1
12	Call Factory	Exhaust Damper Assembly	1
13	38-0814	Fitting—BS, Tube, Male, 90 Degrees	12
14	38-0780	Tubing—Polyethylene, 1/4" O.D. x .040 Wall	12 ft.
15	38-0781	1/4" Tubing Bulkhead Connector	2
15A	38-0808	Brass Coupling, 1/4"	1
15B	38-0827	Sintered Metal Dust Filter	1
16	18-1149-xx	Inlet Plate Weldment (xx = Specify Inlet Diameter, inches)	1
17	02-6041	14" Slide Gate Package	1
18	10-5687	Panel, Inspection, Bottom	1
19	20-3048	Supra-Clean Timer board	1
20	07-0135-08	0-8" Magnehelic Gage	1
20A	07-0135-04	0-4" Magnehelic Gage (used for afterfilter)	option
21	07-0522	0-8" Photohelic Gage	1
22	38-0780	1/4" Gauge Tubing	25 ft.

FJH-4 SERIES

Item No.	Part No.	Description	Quantity
1	33-xxxx	Cartridge Filter (View Sticker on unit or on end of filter for part number)	16
2	02-5410	Access Cover Assembly FJH, with inside & outside gaskets	8
2A	42-0320	Gasket Outside, Filter Access Cover	8
2B	42-0312	Gasket Inside, Filter Access Cover	8
3	10-5728	Panel, Inspection, Front	1
3A	42-0163	Gasket Neoprene Sponge/per door	10 ft.
4	10-0459	Side Access Panel (optional) right or left side	1
5	18-0964	Air Manifold Weldment	1
6	07-0128-02	Diaphragm Valve — 1"	8
6A	07-0116	Diaphragm Repair Kit, 1" BUNA-N	1
7	20-1624-0808	Solenoid Valve Enclosure	1
7A	07-0133	Solenoid Valve Repair Kit	1
7B	20-1631	Replacement Solenoid Valve, 1/8"	8
8	45-0237	55-Gallon Drum	1
8A	18-1595	Short Drum	1
9	03-1105	Drum Lid Kit	1
9A	02-0303	Drum Lid with Gaskets, 14" Collar	1
9A	35-0303	Drum Lid with Gaskets & Latch Keepers, 14"	1
9B	42-0315	Gasket Section, Drum Lid	4
9C	15-0233	Hose Clamp, 14" Diameter	2
9D	15-0202-15	Flex Duct, 14" Diameter, 15" Long	1
9E	02-6115	Drum Lid Latch Kit Drum Band Assembly	1
10	18-0944	Adapter Plate Weldment	1
11	Call Factory	Exhaust Fan Assembly	1
12	Call Factory	Exhaust Damper Assembly	1
13	38-0814	Fitting—BS, Tube, Male, 90 Degrees	16
14	38-0780	Tubing—Polyethylene, 1/4" O.D. x .040 Wall	16 ft.
15	38-0781	1/4" Tubing Bulkhead Connector	2
15A	38-0808	Brass Coupling, 1/4"	1
15B	38-0827	Sintered Metal Dust Filter	1
16	18-0901-xx	Inlet Plate Weldment (xx = Specify Inlet Diameter, inches)	1
17	02-6041	14" Slide Gate Package	1
18	10-5687	Panel, Inspection, Bottom	1
19	20-3048	Supra-Clean Timer board	1
20	07-0135-08	0-8" Magnehelic Gage	1
20A	07-0135-04	0-4" Magnehelic Gage (used for afterfilter)	option
21	07-0522	0-8" Photohelic Gage	1
22	38-0780	1/4" Gauge Tubing	25 ft.

UNITED AIR SPECIALISTS, INC.
LIMITED WARRANTY

UAS warrants all equipment manufactured and sold by UAS against defective parts and workmanship for one year from date of shipment to Purchaser. This warranty is subject to the limitations in UAS' standard terms and conditions provided to Purchaser. Any unauthorized repairs or modifications or abnormal use or misuse of equipment will void all warranties. In no case will UAS' responsibility or warranty extend to equipment not manufactured by UAS.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANT-ABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT.

As Purchasers exclusive remedy for any defects in the equipment, UAS will exchange or repair any defective parts during the warranty period, provided such parts are returned, prepaid, to UAS' factory. The obligation of UAS is limited to furnishing replacement parts F.O.B. UAS' factory or making repairs at UAS' factory of any parts which are determined, upon inspection by UAS, to be defective. UAS is not responsible for labor or transportation charges for the removal, reshipment or reinstallation of the parts.

IN NO EVENT WILL UAS BE RESPONSIBLE FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES.

To Order Genuine Supra-Pulse Replacement Parts and Supra-Series Replacement Filters Call 1-800-252-HOGS

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